



Daylighting in the Dunes

Tom Hohman, Indiana Department of Natural Resources

Over the years, many Indiana wetlands have been drained, paved over, or otherwise converted to some modern “beneficial” use. What is rare is the reverse—converting one of man’s constructed areas into a natural area. That was the goal of an unusual project at Indiana Dunes State Park.

Wetlands are obviously much appreciated by the Indiana Department of Natural Resources, and development or enhancement of wetland areas to benefit wildlife is not unusual. However, in this case, the wetland was developed for its abilities to improve water quality.



The dunes of Lake Michigan are the site of a project to unpave a parking lot and restore a wetland. Photo courtesy of EPA.

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There had been occasional high bacteria levels at bathing beaches along the Indiana shore of Lake Michigan for some time. When levels were high, beaches had to be closed. This occurred even in locations where there was no obvious source of pollution on which to pin the blame.

For years federal, state, and local health and environmental agencies had investigated the problem, hoping to find the cause. Dunes Creek flows through Indiana Dunes into Lake Michigan immediately adjacent to the park bathing beach. It was believed that some unknown source of pollution was entering Dunes Creek and

polluting the beach area. But, failing to find any significant man-made source, they had to conclude that it was natural in origin. The inescapable fact was, animals poop too!

If humans were not the source of pollution, they certainly had contributed to the problem. When the park was first developed in the 1920s and 30s, a 1,300-foot section of Dunes Creek was routed through an 84-inch diameter steel pipe, and the area above it was paved to provide parking for beach visitors. This effectively eliminated the natural cleansing effects of the stream.

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To promote the appreciation, preservation, conservation, utilization and scientific study of the flora native to Indiana and to educate the public about the value, beauty, diversity, and environmental importance of indigenous vegetation.

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Spring... into Action!

Karen Hartlep

Green is the prime color of the world, and that from which its loveliness arises. —Pedro Caderon de la Barca, Spanish poet/playwright, 1600–1681

Last evening, as the last of the snow (the big one) melted away, I was standing in the drizzle watching the mists form and dissipate above my little stream down the hill in the woods, and I thought I could smell and feel Spring coming. What an exciting time is near! By the time you read this, all threat of snow will no doubt be gone, spring ephemerals will be popping out of the leaf litter, and there will be a hint of that gorgeous green haze on the trees. It's almost impossible to keep track of all the changes that occur—it's the time of year I most wish I had more time to spend outdoors...watching.

It's an exciting time of year for INPAWS too. Through Tom Hohman's incredible persistence, hard work, and vision, a new chapter has just formed incorporating the counties of Allen, Adams, Dekalb, Elkhart, Huntington, Kosciusko, Lagrange, Noble, Steuben, Wabash, Wells, and Whitley—the Northeast Chapter! Tom and I traveled to Fort Wayne in mid-February to meet with a group Tom had rounded up to discuss the possibility of forming this chapter; two weeks later this enthusiastic group had done it! They've already managed an INPAWS presence at the Fort Wayne Home and Garden Show and the Farm and Tillage Show in Auburn, and have several events in the works.

Congratulations and thank you to new INPAWS Northeast Chapter officers George Manning, President; Jennifer Manning, Vice President; and Cindy Loos, Secretary/Treasurer. I'm looking forward to hearing about your successes!

And although fall seems far away, planning has already begun for the Annual Conference. Our new co-chairs Kathleen Hartman and Dawn Stelts are tackling this job like a force of nature! It's going to be a very special event—stay tuned for details.

The events that most excite our members, though, are getting out there. To that end, we hope to have a couple of Plant Rescues this spring organized by David and Dawn Bauman to help supply our Plant Sale and Auction, May 12. Co-chairs Janice Gustafarro and Tom Hohman are gunning for the largest sales event ever, so arrive early and bring your checkbook! Better yet, volunteer.

Last, and perhaps best—the hikes! Mike Homoya has organized an incredible series of hikes throughout our state and beyond. They're listed on page 15. Mark your calendar, and look for details on our website and in upcoming mailings.

See you "out there"!

—Karen

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Soil & Water Conservation Districts

Soil and Water Conservation Districts (SWCDs) promote the wise use and care of soil, water, air, plant, animal, and related natural resources of their county. They provide on-site technical assistance and training to individuals and organizations and seek cost-share funding for community projects. They communicate, cooperate, and coordinate efforts with local private landowners, organizations, and local, state, and federal government agencies.

This past year, the Marion County SWCD provided some 300 direct technical assistance visits to local county residents and government agencies on such issues as erosion and sedimentation control, water quality and drainage matters, tree planting, wildlife habitat development, and loss of greenspace.

It also conducted more than 200 site reviews to assist local units of government with land use issues, permit reviews for new developments, and landfill inspections. MCSWCD helped to fund a dozen or more conservation projects through various state and federal cost-share programs; and it provided workshops for contractors on vegetative alternatives to stormwater control.

SWCD leadership recognizes that emerging conservation issues warrant more of their focus: As residential growth continues, concern is rising over the additional water quality degradation. Invasive plant species are taking over parks and areas along streams and highways. Pests such as emerald ash borer, along with increasing development, may be hastening tree canopy and forest loss. Resource issues may need to be addressed on more of a watershed basis.

This is prime time to communicate with your county SWCD on what important services they should be providing to the community. Find your county agency at www.nacdnet.org/resources/IN.htm.

Squirrel corn (*Dicentra canadensis*) painted by Mary Vaux Walcott.



Dunes, continued from page 1

Thanks to a federal grant* and the realization that the park had more parking spaces than were normally needed, serious study began in 2004 for a project to remove 500 feet of pipe and parking lot and restore the natural stream. This type of project, called "daylighting," had been done before but, as far as anyone knew, never in a sand dune environment. Caution would be needed because the parking lot was immediately adjacent to a large dune that extended over one corner of the lot.

Two private firms were hired to evaluate what could be done. One was The Troyer Group, an engineering and architectural firm from South Bend; the other was J.F. New, an ecological consulting firm from Walkerton, Indiana. They concluded that a carefully thought-through project could successfully restore the natural ecosystem without impacting the sand dune.

Serious design work began in 2005, and after soliciting bids from contractors, DNR commissioned Gariup Construction of Gary to undertake the construction work. First they rerouted the stream to a temporary location adjacent to the parking lot, so that



the concrete pavement and steel pipe could be removed.

Then they constructed a new meandering channel for the stream, roughly mimicking the original route. This channel was intended to hold the stream only during normal flows, allowing for a larger area to hold flows during heavy rain events.

From Parking Lot

Construction was completed in spring of 2006, allowing planting of a mix of plants and seed native to the area and suitable for the stresses to which that sandy location would subject them. The input of both J.F. New and IDNR, Division of Nature Preserves, was sought to identify the best mix of plants for that site. And thus was a wetland reborn where once a parking lot had been!

*Partial funding for the project was provided by the National Oceanic and Atmospheric Administration (NOAA), through the Lake Michigan Coastal Program.



Daylighting Dunes Creek has been a tremendous success. A previous wetland developed two years earlier within the park on a branch of Dunes Creek showed that it takes about two years for the biological systems to develop enough to significantly improve the water quality. However, testing conducted in late summer of 2006 already showed small improvements.

As in all restorations of natural systems, there are some bare spots in the new vegetation, primarily from high water flows before the new plants could become established. To help offset this problem, Friends of the Dunes donated additional plants which the state park staff planted during the summer. Testing will continue in 2007, and it is expected that the water



How Wetlands Reduce Bacteria Levels

It was long believed that *Escherichia coli* (*E. coli*) bacteria, which originate in the intestines of warm-blooded animals, could not survive long outside the former host. Recent studies have shown this is not true. Such bacteria can survive in soil and forest debris for lengthy periods, only to be flushed away into a nearby stream when it rains or when accumulated snow melts. Of course, *E. coli* can also be introduced from poorly operating septic systems or wastewater treatment plants.

It is now known that wetlands significantly reduce levels of *E. coli* and that with sufficient retention times in the wetland, *E. coli* bacteria can be almost eliminated.

Constructed wetlands require one to three years for the ecosystem to become fully functional. The first factor to influence the *E. coli* levels, and the most significant factor during the first year, is daylight. As the wetland becomes more fully established, predation on the *E. coli* by other microorganisms becomes a significant factor. Another factor that can have an effect is sedimentation of suspended particles on which the bacteria are attached.

Source: Density and Population Structure of Stream *Escherichia coli* Are Influenced by Interacting Hydrometeorological Conditions. Richard L. Whitman et al. United States Geological Survey, Great Lakes Science Center, Lake Michigan Ecological Research Station, Porter, Indiana.

...to Wetland

quality levels will continue to improve, leading to fewer (if any) beach closings.

A second bonus effect of the wetland will be public education. The wetland is located in an area more noted for sunbathing and partying than for bringing people into contact with nature. Interpretive displays have

been established, and a wheelchair accessible trail is planned.

Tom Hohman is director of the Division of Engineering of the Indiana Department of Natural Resources and an avid member of INPAWS.



Dunes Creek Plant List

Forbs

<i>Alisma</i> spp.	Water plantain
<i>Asclepias incarnata</i>	Swamp milkweed
<i>Aster novae-angliae</i>	New England aster
<i>Coreopsis tripteris</i>	Tall coreopsis
<i>Eupatorium maculatum</i>	Spotted Joe Pye weed
<i>Iris virginica shrevei</i>	Blue flag iris
<i>Lobelia cardinalis</i>	Cardinal flower
<i>Lobelia siphilitica</i>	Great blue lobelia
<i>Lythrum alatum</i>	Winged loosestrife
<i>Mimulus ringens</i>	Monkey flower
<i>Penthorum sedoides</i>	Ditch stonecrop
<i>Sagittaria latifolia</i>	Broad leaf arrowhead
<i>Senecio aureus</i>	Golden ragwort
<i>Solidago rugosa</i>	Rough goldenrod
<i>Verbena hastata</i>	Blue vervain
<i>Zizia aurea</i>	Golden Alexanders

Grasses, Sedges, Rushes

<i>Carex comosa</i>	Bristly sedge
<i>Carex crinita</i>	Fringed sedge
<i>Carex locustris</i>	Lake sedge
<i>Carex stricta</i>	Tussock sedge
<i>Carex vulpinoidea</i>	Brown fox sedge
<i>Elymus virginicus</i>	Virginia wild rye
<i>Glyceria striata</i>	Fowl manna grass
<i>Juncus effusus</i>	Common rush
<i>Juncus torreyi</i>	Torrey's rush
<i>Scirpus atrovirens</i>	Dark green rush
<i>Scirpus cyperinus</i>	Woolgrass
<i>Spartina pectinata</i>	Prairie cord grass

Cracking the Nutt. of Plant Name Authorities

Rebecca Dolan, Ph.D.
Friesner Herbarium, Butler University

Novice botanizers rejoice! With this article, Becky Dolan inaugurates a new series for those of you just learning the ropes of seeking out, identifying, and appreciating plants in the field. Look for all the basics to be presented in coming issues. —Ed.

You may be familiar with the formal presentation of scientific plant names that gives every plant species a binomial (two-part) Latin name consisting of the genus and a specific epithet. But what about those mysterious names and abbreviated names that sometimes follow them, like L. or Muhl. or Nutt.?

These names, sometimes called the “authority,” carry important historical information. They are the namers or “authors” of the species. So when a botanist uses the formal presentation including the name, the botanist is referring to the plant given this name by this person.

Scientific plant naming conventions are quite precise for good reason. There can be confusion out there in the plant world. Although electronic record keeping and communication make errors less likely than before, it is still possible for different authorities to apply the same name to more than one plant. Also, concepts of species are somewhat plastic, based on opinion, so the use of an authority name means “this species as it was envisioned and described by the named authority and as is represented by the type specimen the authority assigned to it.”

The conventions of plant nomenclature dictate that new names be published, so knowing the authority can help you track down the publication in which a particular combination of genus and specific epithet was first used. That publication will have the authority’s description of the spe-



cies and often the rationale for considering the species new to science. For example, you may find a key comparing features of the species to related species, helping to define its unique features.

Confused? A few examples may help:

***Cornus florida* L. Flowering dogwood**

Flowering dogwood was first described as new to science by Carolus Linnaeus (1707–1778), a Swedish botanist credited with creating the two-part scientific name format. Before Linnaeus’ work, formal plant names could have up to 7 or 8 parts. He worked during a period of burgeoning exploration in the New World, when many newly discovered species were sent back to European experts for identification. It turns out the European flora is not very diverse, and the existing naming system, easily applied to these few species, was woefully inadequate to handle the great variety of new plants streaming in from the Americas. This influx of undescribed plants helped lead to the development of the simplified two-part system. Linnaeus named many of the plants native to Indiana, so the “L.” authority is often seen in reference books even though he never traveled to North America. (*Cornus florida* L. illustrated above courtesy of National Geographic Society.)

***Chelone obliqua* L. var. *speciosa* Pennell & Wherry Rose turtlehead**

When two botanists coauthor a paper that names a new plant, both of their names are shown, connected by an ampersand. Linnaeus described this species. Pennell and Wherry described and named the variety.

***Ranunculus fascicularis* Muhl. ex Bigelow Early buttercup**

Bigelow published the valid, accepted species description, but he credits Muhlenberg with originally recognizing the plant as new to science.

***Carya ovata* (Miller.) K.Koch. Shagbark hickory**

By the time the latter-day botanists of recent years came along, most species had already been identified and named. However, ideas sometimes change about how a species should be classified. When a species is given a new treatment that moves it from one genus to another, the original authority is retained in parentheses, followed

Speak!

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by the name of the authority who made the change. Reasons for moving species between genera include examination of specimens not previously seen that provide more information; new techniques, such as better microscopes or biochemical analysis of DNA sequences, that suggest different affinities; and the personality and philosophical bent of the authority. Some are “lumpers,” not prone to ascribe significance to minor character differences; others are “splitters” by nature.

***Platanthera peramoena* (A. Gray) A. Gray Purple fringeless orchid**

Gray first described “*peramoena*” in one genus and subsequently transferred it to *Platanthera*.

***Silene regia* Sims Royal catch-fly**

This wonderful prairie plant was reportedly first collected by Thomas Nuttall. Nuttall brought it to England, where it was described and published by Sims. Sims gets all the credit.

***Penstemon deamii* Pennell Deam’s beardtongue**

Specific epithets are sometimes based on names. A plant may be named in honor of original collectors or discoverers, like Deam’s beardtongue, named by Pennell.

***Streptanthus brachiatus* Hoffman spp. *hoffmanii* Dolan & Laprè Socrates Mine Jewelflower**

I had the chance to work with some very cool plants that grow in Lake, Napa, and Sonoma Counties in California. These are restricted to serpentine rock outcrops and are found nowhere else. A colleague and I published a paper describing a new species and a new subspecies of an already recognized plant that had been named by Hoffman (named above). Our treatment therefore was convincing to the two reviewers and editor of the journal that published our work. Later, our subspecies, but not our species, was further accepted by the experts who published the most recent *Flora of California*. By not including our new species in the book, they showed they felt it was not distinct enough to warrant a new name, most likely because they felt its characteristics were within the range of variation of an already named plant. Our subspecies *S. brachiatus* spp. *hoffmanii*, however, has come into use and is listed in the United States Department of Agriculture PLANTS Database (plants.usda.gov). I hope both our accepted subspecies and our less widely accepted species will be recognized when the *Flora of North America* publishes its volume that includes the mustard family (Brassicaceae), of which *Streptanthus* is a member. This is how new names come into use.

To help standardize the usage of abbreviated forms of names, an official list of author names is maintained by the Royal Botanic Gardens, Kew, in England. You can search for complete names to match abbreviations, and vice-versa, at www.ipni.org/ipni/authorsearchpage.do.

Next time, we’ll explore some of the more common authorities you’ll encounter when looking up names of plants that grow in Indiana.

BOOK REVIEW

Not Just for the Birds

Birding Guide to South-Central Indiana

*Compiled by the Sassafras Audubon Society
Bloomington, Indiana*

INPAWS members who live in south-central Indiana, or who have occasion to visit the area, might want to know about the new *Birding Guide to South-Central Indiana*. A collaboration by some of the area’s top birders, it lists 27 varied hotspots that are likely to yield not only unusual birds but also gorgeous scenery and interesting native plants. Among the coauthors are Don Whitehead, Lee Sterrenburg, Jim and Susan Hengeveld, David Daniels, and INPAWS’s own Cathy Meyer.

Bloomington-area sites include Griffy Lake, Little Africa at Lake Lemon, Stillwater Marsh, Cedar Bluffs, and Leonard Springs Nature Preserve. Farther afield are the recently designated Goose Pond/Beehunter Marsh Fish and Wildlife Area in Green County, Muscatatuck National Wildlife Refuge east of Seymour, and Orleans Reservoir. A helpful locator map groups 23 of the sites. The other four, more remote, have their own maps.

Descriptions have detailed directions for locating each birding hotspot, information on the type of terrain, and a helpful seasonal breakdown of what might be spotted when. A checklist of area birds shows their relative abundance in each season.

This unassuming little booklet, only 56 pages long, is full of great information for birders, native plant enthusiasts, and people who just like to be outdoors. It was published in fall 2006, and copies are available at Wild Birds Unlimited in Bloomington, and at the SAS website, www.sassafrasaudubon.org/guide.html.

You may order it by mailing a check to SAS at P.O. Box 85, Bloomington, IN 47402. The cost is \$8 for members and \$10 for non-members. Proceeds from the sale of the guide go to projects at Goose Pond Fish and Wildlife Area, SAS’s adopted Important Bird Area.

—Bobbi Diehl



The trumpeter swan was restored to Muscatatuck NWR in 1998. Artwork courtesy of www.wesave.org/swan/.

We Welcome These New INPAWS Members

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Dig!

Native plant donations are key to INPAWS' Plant Sale and Auction. Any that you care to donate will be gratefully accepted. Please label the plants and pot them several weeks before the event so they look their best.

Blissful Botanizing Conclusion

Hilary Cox, Leescapes Garden Designs

By now, we had completely revised the first impressions engendered by the prominent Queen Anne's lace and other invasives from our first trip in June. We no longer saw the erstwhile hayfield as a "poor remnant" of a prairie but knew it for what it was—the real thing!

In fact, Dee Ann and I were fairly certain we were looking at a barrens, something like Eastview Barrens State Nature Preserve in the same county. We consulted the Web and found some discussion on the term "barrens" for this area, with opinion leaning towards xeric limestone prairie instead.* Whatever the academics decide, we were just enthralled with our treasure trove! And of course we had to make yet another run south in August, just to see what we could find next.

In an effort to beat the heat, we set off very early the morning of August 22, planning to meet Andy and the luxury botanizing vehicle at the farm. One of the things I haven't mentioned, not wanting to deter putative botanists, is the discomfort we suffer both in the field and for a week to ten days afterwards.

There is not much shade in a prairie until the tall grasses actually *get* tall, which isn't until later in the year. Even in August they're not yet over our heads; they're not even up to our hips. So we're out in the sun and it's hot. Then there are the insects. You name them, we had them: ticks, large and small, lots; chiggers, mosquitoes, sand fleas (oh what misery...you think chiggers are bad?). And later—in September, I think—one we hadn't encountered before: thousands of teeny tiny tic nymphs! At least they scratch out easily, if you can see them at all...

So, to shield ourselves from the sun and keep out as many of the wee beasties as possible, we wear long, thick socks over short thin socks tucked over/under pants; thick shoes/boots; and long sleeves buttoned at the cuff. Right at that point on a 90-degree day when you are about to fling caution to the wind and remove just one layer...one or other of us would start to itch, or find a tick, and the better part of valor would prevail despite the heat!

*www.epa.gov/glnpo/ecopage/upland/oak/oak94/Proceedings/Baskin.html#Table%201

We were already well into our usual patch before Andy arrived, and once again the natural cycle of time had wrought its change. The plants that had been flowering a month before were now mostly producing seed, and there was a whole new crop of plants to work on. Some we had seen in their earlier leafy stages but were unable to identify until they flowered. There was the green-fringed orchid (*Platanthera lacera*); whorled milkweed (*Asclepias verticillata*), which is considered a noxious weed in some states(!); and the ashy sunflower (*Helianthus mollis*)—just one, I believe! The following list includes a few more of our findings, some expected, others less so:

Agalinis tenuifolia Slenderleaf false foxglove
Arnoglossum (Cacalia) atriplicifolium Pale Indian plantain
Bidens coronata Tickseed
Campsis radicans Trumpet vine/creeper
Conoclinium (Eupatorium) coelestinum Blue mistflower
Coreopsis tripteris Tall tickseed
Desmodium nudiflora Nakedflower tick trefoil
Eupatorium altissimum Tall Joe Pye weed
Euthamia (Solidago) graminifolia Flattop goldenrod
Gillenia stipulata American ipecac
Lespedeza virginica Slender lespedeza
Lobelia inflata Indian tobacco
Ludwigia alternifolia Seedbox
Solidago juncea Early goldenrod
Sorghastrum nutans Indian grass
Spiranthes lacera Northern slender lady's tresses
Strophostyles umbellata Pink fuzzybean
Strophostyles leiosperm Slickseed fuzzybean
Trichostema brachiatum Fluxweed, false pennyroyal

Also, we drove back to the pasture where previously we had mangled the green comet milkweed (*Asclepias viridiflora*) and were overjoyed to see it had developed seed pods. We hadn't totally destroyed the one example of this plant we had seen, and could hope to return next year and find at least a seedling or two in the vicinity.

By this late stage in the season, Dee Ann and I were quietly ecstatic about our discovery of this Kentucky prairie, each trip having been like dipping our arms into a treasure chest and pulling out gold, silver, and all kinds of gems. Neither one of us is a trained botanist, though we have both worked in related fields, and it naturally takes us far longer



than an experienced person in the field to grasp the ramifications of what we are seeing. It has been a major learning curve for us, but one with far-reaching implications. Where inquiry has been necessary, we have confirmed with our more informed acquaintances in the field that we really are understanding our findings correctly. Many of the plants we have "discovered" turn out to be "infrequent," "rare," "endangered," or "considered extirpated/historical" in Kentucky. With the help of Andy's brother-in-law Wayne, who has promised us that he will continue the "management" practices he has been observing for the past seven or eight years—i.e., taking the bush hog to the fields once a year in late October/early November—maybe we can change the records.

At this point we knew we would make at least two more trips this year: one each in September and October. Now armed with so much expert advice on the more unusual plants we might want to look for, using the presence of plants we had already seen as "indicator plants," it seems strange that our penultimate "dip" into the treasure chest unearthed our most dramatic gems to date; yet we literally stumbled into them, the most unexpected and beautiful of our discoveries.

Remember the unusual plant that turned out to be in the Agave family, *Manfreda virginica*? We were returning to that area, which had proven to be the most productive in the sense of "infrequent" to "rare"

plants—and it was like walking onto bejeweled ground. The bluest of sapphires is no match for these flowers. We were looking at *Gentiana puberulenta*, almost a carpet of them, and we were down on our knees on the (wet) ground—not an infrequent occurrence for us, but unnoticed this time!—just trying to take them in: the glory of seeing something blooming this late in the year, that blue, and so many of them! We stayed for a long while and brought back many pictures, but the memory of that moment will stay with me forever.

We know we can look forward to many recurrences of our days in the prairie over the next few years, but the excitement of this first year will be hard to match. Our last trip, on October 31, 2006, showed us the sheer beauty and abundance of this type of ecosystem, the innumerable seeds designed to sustain all the life forms encompassed therein, without outside help—or hindrance. May we never again, in future natural history books, read the word "extirpated" in relation to such a place...

Our thanks to Andy Roller, his sister Mary, and her husband Wayne for encouraging and accompanying us on this adventure, and especially for their patience with us and their willingness to continue the practices that will ensure the future of this magical corner of the Midwest.

Hike!

Tour premiere wildflower viewing areas with expert guides:

Big Walnut (Putnam County)
April 14

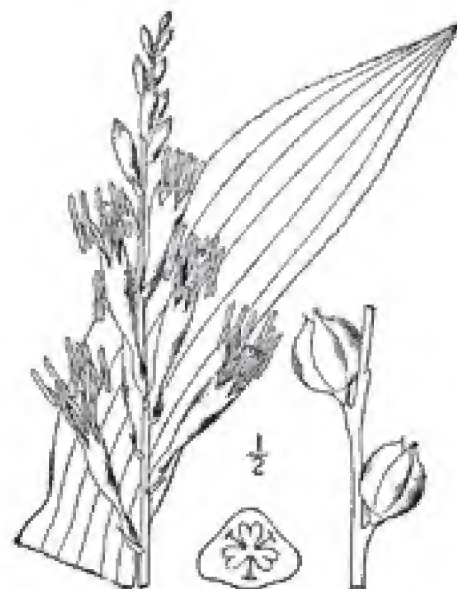
Twin Swamps (Posey County)
May 19

Limberlost Swamp (Adams and Jay Counties)
June 23

Ambler Flatwoods and Springfield Fen
(LaPorte County)
August 11

Edge of Appalachia; Shawnee State Forest
(Adams and Scioto Counties, Ohio)
September 8 & 9

Pedestal Rock Nature Preserve (Parke County)
October 20



Manfreda virginica (L.) Salisb. ex Rose
False aloe. USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. Illustrated flora of the northern states and Canada. Vol. 1: 534. Photo above left by Dee Ann Peine.

Rain or Shine, They Pull and Dine

Maryland Native Plant Society member Luisa Thompson and her friend Sally Voris had a bright idea when they saw the need for a large-scale volunteer effort to remove invasive weeds from nearby Patapsco Valley State Park—and the Garlic Mustard Challenge was born!

Besides luring crowds to their aid that first year, the event continues to be one of the most popular and successful events put on by the Friends of the Patapsco Valley and Heritage Greenway. Volunteers have removed more than 3,722 pounds of garlic mustard from the park since 2000, and the annual May event has turned into a cooking contest for local professional and amateur chefs to show off their culinary talents using garlic mustard as one of the ingredients.

After the garlic mustard dishes are judged, free samples are available for the helpers, who are also entertained with stories and music. The Garlic Mustard Challenge motto: “We pull and dine...rain or shine!”

Tips on Cooking with Garlic Mustard

- Use garlic mustard in any recipe calling for mustard greens.
- Young plants have a mild mustard flavor with hints of garlic and can be used raw.
- Older, larger leaves and plants have a more bitter, stronger flavor.
- The round leaves are less bitter than the triangular ones on the flower stalk.
- If the plant is in full flower or has produced seeds, it will be much more bitter.
- DO NOT USE plants that may have been treated with weed killer.
- Pull up the entire plant gently. The roots will keep it fresh until you are ready to use it. Then cut off the leaves, discard the flower stalk, wash and use.
- Be creative; experiment with this weed while helping to control it!

Source: Friends of the Patapsco Valley and Heritage Greenway, Inc., www.patapscoheritagegreenway.org/garlic07/index.html

May's the Month to

While strolling the woodland in May you come upon a vast carpet of pretty little four-petaled white flowers atop 2-foot stems, ornamenting the forest floor. A pretty sight indeed—for a noxious weed that has aggressively invaded our forested natural areas! It's that evil invasive garlic mustard, capable of dominating the ground cover layer to the exclusion of other herbaceous species. Here's what you need to know about it.

Garlic mustard or *Alliaria petiolata* (M. Bieb.) Cavara & Grande occurs most frequently in upland and floodplain forests, savannas, and along roadsides. It invades shaded areas, especially disturbed sites, and open woodland. It is capable of growing in dense shade and occasionally occurs in areas receiving full sun. Garlic mustard is native to Europe, and also occurs in northern Africa, Sri Lanka, and India. It was introduced into the U.S. in the 1800s and cultivated for food and medicinal purposes. In North America, garlic mustard is now distributed from Quebec and Ontario, south to North Carolina and Kentucky, and west to Kansas and North Dakota. In Indiana, it has been documented in almost every county and is now abundant in many of our forested areas.



Photo by Ohio Department of Natural Resources.

How will I recognize it?

Garlic mustard is generally the only tall, white-flowered, four-petaled plant that blooms in May. It is easily distinguished from all other woodland mustard plants by its characteristic odor of garlic and the 2-4 foot (0.6-1.2 m) tall flower stalks covered with numerous small white flowers. The alternate, coarsely toothed, broadly triangular stem leaves with a distinct petiole are also characteristic. The garlic odor gradually dissipates by autumn, and garlic mustard rosettes may then be mistaken for violets (*Viola* spp.) or immature white avens (*Geum canadense*).

Garlic mustard is a biennial herb. Seeds germinate in early spring, young plants overwinter as basal rosettes, and adults bloom from May-June the following year. Each plant dies after producing seed. Seeds disperse when the siliques burst at maturity in August. Seeds have a 20-month dormancy period and do not germinate until the second spring after ripening. The species reproduces readily from the numerous seeds produced.

Garlic mustard can be distinguished from other species by examining the roots. It has a white slender taproot, with a characteristic crook or “s” shape at the top of the root, just below the base of the stem. Garlic mustard should be accurately identified before attempting any control measures. If in doubt, confirm the plant's identity with a knowledgeable individual or by consulting references.

Pull Garlic Mustard

Now that I know it's garlic mustard...

If you've encountered a light infestation, remove the plants by hand-pulling. Such control is effective as long as the root is removed. If the stem snaps off from the root crown of a non-flowering plant, the plant may re-sprout. When hand-pulling, disturb the soil as little as possible, and tamp the soil firmly after removing the plant. Soil disturbance can bring garlic mustard seed to the surface and create a favorable environment for garlic mustard germination and growth.

Additional effort may be required to control garlic mustard in high quality natural communities with heavy infestations. Research indicates that cutting flowering stems at ground level results in 99% mortality, while cutting at 4 inches (10 cm) above ground level produces 71% mortality and reduces total seed production by 98%. Plants cut near ground level when in full flower usually do not re-sprout. Viable seed may be produced after stems are cut, so remove cut stems from the site when possible.

Besides manually cutting the plants, additional efforts using herbicides, burning the area, or a combination of these practices may be needed for heavy infestations, and it is recommended that you enlist professional assistance. Pesticide application and or prescribed burning should be carried out appropriately according to all state and federal laws. The Nature Conservancy has successfully controlled or eliminated this plant from several sites by a combination of spring burning, hand-pulling, and cutting flowering stems with a scythe. When garlic mustard occurs in nearly pure populations with few other plants, scything is advantageous in that large areas can be covered quickly and the soil is not disturbed.

Tell me more...

For more details about garlic mustard and other invasive species, get a fact sheet from the Midwest Invasive Plant Network at www.nps.gov/plants/alien/fact/alpe1.htm or visit the Midwest Invasive Plant Network website at www.mipn.org. For help with evaluating a garlic mustard threat in your woodland, identify your local forester at IDNR Division of Forestry by visiting www.in.gov/dnr/forestry and selecting Private Landowner Assistance from the menu. Your local Soil and Water Conservation District (SWCD) can also be of assistance; get their contact information at www.in.gov/isda/soil/contacts/map.html.

Renew!

Your membership is appreciated and important to INPAWS. Not sure if you renewed? Look for a number in the upper right corner of the address label on the back of this issue. If it says 2006, you have not renewed your INPAWS membership for 2007. Please renew now by completing the membership renewal letter mailed to you in January or the membership form available at www.inpaws.org. Return it to: INPAWS, P.O. Box 30317, Indianapolis, IN 46230-0317.

BACK BY POPULAR REQUEST

Sophia Anderson's Famous Garlic Mustard Lasagna

In a heavy skillet, brown:

2 pounds ground beef, Italian sausage, or a combination

Add and simmer 30 minutes, stirring frequently:

1 garlic clove, minced

1 tablespoon dried basil

½ teaspoon salt

1 16-ounce can tomatoes

2 6-ounce cans tomato paste

½ cup dry red wine

Cook according to package instructions, drain, and set aside in two parts:

1-pound package lasagna noodles

Thinly slice and set aside in two parts:

1 pound Mozzarella cheese

Steam until wilted and set aside to cool:

10 ounces garlic mustard leaves

Combine and blend well:

2 eggs, beaten

3 cups Ricotta or cottage cheese

½ cup grated Parmesan cheese

2 tablespoons parsley flakes

½ teaspoon salt

⅛ teaspoon black pepper

Into a 9 x 13 x 2 buttered baking dish, lay half the lasagna noodles. Spread with half the Ricotta mixture, half the Mozzarella slices, all the garlic mustard, and half the meat sauce.

Place the remaining noodles in position and cover with the remaining Ricotta mixture, meat sauce, and Mozzarella slices, in that order.

Bake in a 375-degree oven for 30 minutes or until bubbly. *Bon appétit!*

Reprinted from Indiana Native Plant and Wildflower Society News, Spring 2000.

Spotted Geranium

Gene E. Bush,
Munchkin Nursery

Geranium maculatum

Steady horses plod along, one foot in front of the other, day after day, doing the job they were assigned—reliable, dependable, steadfast, and often taken for granted. Old Ned, being a common breed, is sure to be ignored in favor of the more exotic Arabians, trotters, and show horses. In like fashion, many a durable native woodland plant is passed over with a ho-hum in favor of the more exotic names and more spectacular performances.

Geranium maculatum, our spotted wood geranium, is one such stalwart. The plough horse of geraniums, it is found in every state east of the Rockies, from Canada through Florida. In Indiana, the geranium is found growing in all but seven counties. The holes in Indiana's map are probably due more to reporting and recording than to the reality of the wild.

Large, handsome palmate leaves can be eight to nine inches across, divided into five to seven segments. Veins running through the leaves create quilting-like patterns on the leaf surface. Bright, rich green color further enhances the foliage. Well-grown stems will reach 18 to 24 inches in height.

Flowers are some shade of rose-purple with a bit of variation in color from one location to another. Each flower has five rounded petals a bit over an inch across with ten stamens. White forms are occasionally found both in the wild and in nursery catalogs. However, the white form is often confused with *Geranium sylvaticum*, the European wood geranium. If you compare the foliage of your native with the European, it is easy to recognize the difference. Look for the flowers to begin opening in April, lasting into the first part of May, depending upon how far north or south you garden.

After fertilization, seed pods form shapes resembling a long, narrow, pointed bird's beak with a rounded head. Crane's bill is a second name given to the geranium because of the seed dispenser's similarity to the long-legged bird. The beak is made up of several little catapults, all hinged at the tip of the beak. Seed rests in little half-



cups at the base forming the head. With maturity, straps from base to point become dry, creating tension. Eventually the pods break loose, and the sudden release of tension flings the seed up to 20 feet away from parent plants.

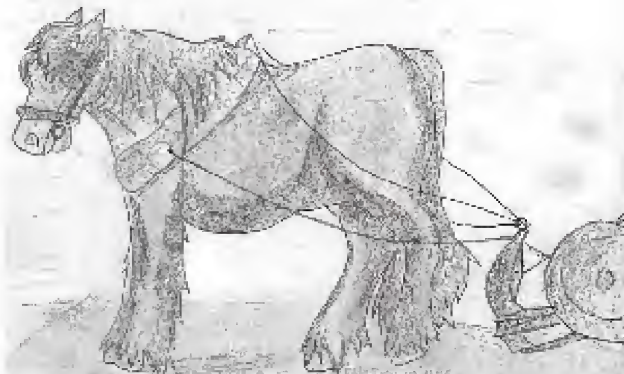
Spotted geranium can and will grow in varying environments as evidenced by their distribution. As with other perennials, if you want the geranium to perform and

appear as in glossy gardening magazines, give it good garden soil. Decent soil and moisture levels, with all the light you can provide without being in full sun, will give you an exhibition-quality plant. I use a mulch of chopped leaves late each fall, and that is both nutrition and mulch for my geraniums. My drift of geraniums covers the ground beneath a native dogwood in open shade. It has now wandered over to mingle with the branches of a rhododendron.

Geranium maculatum can be used beneath trees in root competition where it will per-

form well. Perhaps not as tall or quick-spreading as in more favorable circumstances, it remains a good choice for difficult places in the garden. If the environment becomes too dry, the geranium goes dormant earlier than normal. Usually dormancy is around August in my garden.

A companion plant I especially enjoy is Solomon's seal (*Polygonatum biflorum*), which emerges to arch over the ground-covering drift of geranium. Even more showy are the blooms and berries of the *Smilacina racemosa*, or



Solomon's plume. Tall ferns are a treat, and several of the more common natives work very well. My two favorites are cinnamon fern (*Osmunda cinnamomea*) and royal fern (*O. regalis*). Contrasting textures and colors of foliage are primary, with fertile fronds of the blooming ferns adding to the show through the summer. The large leaves, length of bloom, and fascinating seed pods of spotted geranium create a native garden unsurpassed by any of its more exotic cousins.

©2007 Gene E. Bush. Gene can be reached at Munchkin Nursery & Gardens LLC, 323 Woodside Dr. NW, Depauw, IN 47115, 812-633-4858, or www.munchkinnursery.com. Photo by the author.

Help!

INPAWS Plant Sale Coming Soon

This popular INPAWS fundraiser is a great way to get to know fellow INPAWS members while learning more about native plants. It is also a wonderful way to share your own native plants and knowledge with others. It's set for **Saturday, May 12, at Indiana School for the Blind, Indianapolis.**

Volunteering for this event is fun, and a range of jobs is available, so even if you are new to INPAWS or to native plants, please feel free to join in. We can use volunteers for these tasks:

Publicity: Let us know if you have opportunities to publicize this event.

Donations: Plant donations are gratefully accepted, as well as good books or artwork related to native plants. Plant drop-off is Friday, May 11, 5:00–9:00 p.m. and Saturday, May 12, 7:30–9:30 a.m.

Setup and sales assistance: Helpers are needed to set up tables and process donated plants on Friday, May 11, 5:00–9:00 p.m. and Saturday, May 12, 7:30–9:30 a.m. Helpers are also needed to assist with checkout and customer questions during the event.

With your help, we'll have another successful event! To volunteer, please contact: Tom Hohman at hohmantr@aol.com or 317-831-1715; or Janice Gustaferra at jan_in@egix.net or 317-596-0977.

TAKE A [MINI]-HIKE!

St. Vincent's Backyard

A hidden treasure many Indianapolis north-siders may not be aware of is a small square of woodland immediately south of St. Vincent Hospital's 86th Street campus, and owned by the hospital. Bounded by Harcourt Road, Dugan Drive, Naab Road, and Katie Knox Drive, its beeches, tulip poplars, buckeyes, oaks, and maples shelter an unusually rich abundance of wild flowers in the spring. Now is exactly the right time to visit!

A marked parkour* trail manages to trace out an entire mile by winding a circuitous route through the interior of the area, and it offers an opportunity to discover the woods' ever-changing panorama of spring ephemerals. Pepper-and-salt (*Erigenia bulbosa*) makes a first appearance in mid- to late-March, followed by bloodroot, rue anemone, cut-leaf toothwort, and a veritable carpet of spring beauty and Dutchman's breeches. Other species include yellow and white trout lilies, bent and sessile trilliums, purple and yellow violets, jack-in-the-pulpit, green dragon, and may-apples. There are even a few daffodils, lavender crocus, and star of Bethlehem, possibly moved there by squirrels or raccoons.

Later in the season, a walker can observe large-flowered bellwort, Solomon's plume, waterleaf, and jewelweed. Each species tends to flower somewhat earlier on the southern edge of the area—along Dugan Drive—and spread north. While mostly level, the path is quite muddy in places; be sure to wear old shoes!

The edges of the plot are unfortunately infested with garlic mustard, which several of the regular visitors uproot from time to time, but there has been no concerted effort to eliminate it. Some places have thick stands of honeysuckle bushes as well. But, for the most part, this is one of the most accessible ways to spend a half hour—or longer—enjoying spring wildflowers rarely seen in this abundance.

—Patricia Wittberg

Directions: Take I-465 to either the Michigan Road exit or the Meridian Street exit and head south to 86th Street. At 86th, turn left from Michigan Road or right from Meridian Street and go about a mile until you reach the St. Vincent Hospital complex on the south side of 86th. Turn down either of the two streets (Naab or Harcourt) bordering the hospital. The woods are in the block immediately behind (south of) the hospital.

**I learned a new word: parkour, the physical art of moving from point A to point B as efficiently and quickly as possible, overcoming obstacles in the surrounding environment such as branches, rocks, and walls. —Ed.*

SEEDS



Millenium Seedbank Project Needs You!

Seeds of Success (SOS) at Chicago Botanic Garden seeks native plant enthusiasts to help collect native seed from 1,500 species of flora of the tallgrass prairie and surrounding Midwest ecoregions. SOS is an extension of an international *ex-situ* seed conservation initiative—the Millennium Seed Bank Project—developed and housed at the Royal Botanic Gardens, Kew, UK. This global program aims to collect and seed bank 10% of the world's flora by 2010.

CBG is recruiting and funding individuals who live locally throughout the target territory to serve as “contract botanists.” Seed collection and mileage are compensated. For information, contact Betsy Allen or Emily Yates at msb@chicagobotanic.org. Additional details are posted at www.inpaws.org.



Members Oppose Crown Hill Woods Rezoning

Selected INPAWS Executive Council officers, chapter leaders, and committee members, acting as individuals, have expressed opposition to rezoning the north woods of Crown Hill Cemetery for residential/commercial use.

In a statement sent to the Indianapolis Metropolitan Development Commission, they stated: “As INPAWS leaders, we do not presume to speak for the entire membership, but our opposition to the Crown Hill rezoning grows directly out of INPAWS’ mission of helping Indiana appreciate, preserve, conserve, utilize and study its native trees, shrubs and wildflowers. The north woods of Crown Hill constitute a unique area—one of the largest undisturbed forest areas in Marion County, with evidence of a remnant pre-settlement flatwoods and over 50 varieties of native wildflowers. If the property is rezoned, Indianapolis stands to lose 2,745 established trees between 9 and 80 inches in diameter, some of which may be 200 years old. The proposed development will

destroy a piece of Indiana’s natural heritage that can never be replaced.”

The statement and its signers are posted at www.inpaws.org. Information about proposed alternative uses of the woods may be found at www.allianceofcrownhillneighbors.org.

Meijer Selling Natives

Starting this spring, Meijer shoppers will be able to purchase regionally native plants such as redbud, purple coneflower, and big bluestem. In a groundbreaking partnership, The Nature Conservancy helped Meijer garden centers select 119 trees, shrubs, and perennials that will carry a new “Recommended Non-Invasive” tag. The stores will also remove the invasive Norway maple and Lombardy poplar from their inventories. “People want to help the environment, but don’t often know how,” a Meijer spokesman said. “This will help educate consumers while they’re shopping about what plants are best-suited for their backyard to avoid a detrimental effect on the landscape

we all share.” Signs, videos, audio announcements and brochures will educate shoppers on the benefits of native and noninvasive plants, and Conservancy scientists will train garden center staff to answer customer questions.

Art Show Celebrates Central Indiana Nature Preserves

The Central Indiana Land Trust Inc. (CILTI) announces a historic coming together of environmental representatives and fine art organizations to mount a juried art show entitled “Preserving Nature.”

A select group of the state’s finest landscape artists have rendered scenes from 14 of CILTI’s scenic nature preserves. The show’s gala opening is set for Saturday, April 14, 4:30 p.m., at the Artsgarden in downtown Indianapolis. Stephanie Mills, inspiring author, lecturer, and ecological activist, will deliver the keynote address. CILTI hopes the public will take part in this extraordinary event. Tickets are \$10 at the door.

The paintings will circulate to the following central Indiana venues. **April 14–28:** Artsgarden at Circle Centre Mall, Indianapolis. **May 2–8:** Johnson Center for Fine Arts, Franklin College; reception and presentation on land conservation Monday, May 7, 7:00 p.m. **May 22–June 3:** Carmel Public Library; reception Friday, May 25. **June 4–27:** Exhibit to be split between the Greencastle, Martinsville, Danville and Greenfield Public Libraries. **June 30–July 25:** Brown County Art Gallery.

For more information, please visit www.cilti.org or call 317-631-5263.

Plant Lovers Invited to Join Phenology Network

A new USA National Phenology Network is tracking periodic plant and animal life cycle events that are influenced by seasonal variations in temperature and precipitation. Wide ranges of phenomena are included, from first openings of leaf and flower buds, to insect hatchings and the return of birds. The timings of such events are indicators of the impact of local and global changes in weather and climate on the Earth's biosphere.

The program will include indicator plants (lilacs or other species that facilitate comparisons between sites) and a small set of native plants especially suited to each region. Participation will require just a few minutes each day during the leafing, flowering, and leaf coloring periods in spring and fall. Those of you already participating in CoCoRaHS weather observations (see Spring 2006 Field Notes) are especially valuable, because the weather data you collect may help explain some of the plant behavior and changes.

Register to become a USA-NPN observer at www.npn.uwm.edu. In the "comments" box, put your name, full email address, mailing address, and, for weather watchers, your CoCoRaHS station number. If you do not have Internet access, call 414-229-2436 or write to Prof. Mark D. Schwartz, Department of Geography, UW-Milwaukee, Milwaukee, WI 53201-0413, and furnish the same contact information.

Deadline for Summer Issue of INPAWS Journal: May 23.

Coming Events

Saturday, April 14

INPAWS Field Trip: Spring Ephemerals of Big Walnut Preserve

Moderately rugged hike through ravine forests of Big Walnut Creek and Tall Timber Trail. Led by Roger Hedge, IDNR Division of Nature Preserves. Located near Bainbridge in Putnam County. 10:00 a.m. EDT.

Saturday, April 14

Preserving Nature Art Show

Gala opening 4:30 p.m. at the Artsgarden at Circle Centre Mall, Indianapolis. INPAWS is proud to sponsor this unique art show.

Friday-Sunday, April 27-29

22nd Brown County Wildflower Foray

Monitor habitat change and discover new species in bloom in this annual wildflower count. Hikes and programs take place in Brown and Monroe Counties; some require preregistration. Information at www.fs.fed.us/r9/hoosier/docs/events/wildflower.htm. INPAWS is proud to sponsor this event.

Saturday, May 12

INPAWS Plant Sale and Auction

Book sale 9:30–noon, plant sale 10:00–noon, auction 11:00. Churchman Hall, Indiana School for the Blind, 7725 North College Avenue, Indianapolis, IN 46240. Auctioneer: Mike Stelts. Purchases may be made with cash or check. Plant donation drop-off is Friday, May 11, 5:00–9:00 p.m. and Saturday, May 12, 7:30–9:30 a.m.

Saturday, May 19

INPAWS Field Trip: Twin Swamps Nature Preserve

Level, possibly muddy hike through perhaps the finest of Indiana's few naturally occurring bald cypress swamps. A short boardwalk allows for an up-close look at the swamp without getting wet feet. Led by Mike Homoya, IDNR Division of Nature Preserves. Located near Mt. Vernon in Posey County. 10:00 a.m. CDT.

Saturday, June 23

INPAWS Field Trip: Loblolly Marsh/Limberlost Swamp

Level, possibly muddy hike through the area lovingly described in Gene Stratton-Porter's stories. After nearly a century of growing row crops, this once extensive wetland is being restored to its former grandeur. Led by Ken Brunswick, IDNR Division of Nature Preserves. Located near Bryant in Jay County. 10:00 a.m. EDT.

Watch for announcements of INPAWS events and field trips in the mail, via e-mail, and at www.inpaws.org.

T.A. in Trouble PT. 2

Barbara E. Plampin, PhD, Shirley Heinze Land Trust

Anthropogenic disturbance and deer teeth and hooves aren't the only problems facing Duneland trailing arbutus (*Epigaea repens*). Alarming, most of our plants don't bloom, and the few that do usually fail to set seed. When Indiana Dunes National Lakeshore (IDNL) botanist Dan Mason sent Lydia Miramontes and me to count plants in Eastern Porter County, we found only a scattered handful in bloom. Later, Dan found none had fruited; hence, no seeds.

What was going on? It's not that Dunes T.A. lacks pollinators; the soil is suitable for the necessary ground-dwelling bumblebees (*Bombus bifarius*, *B. terricola*, *B. vagans*), says Dan. It's that T.A. is often dioecious, with male and female flowers living on separate plants. When there aren't enough flowers, bees usually don't see them, and when they do, a phenomenon called receptivity enters the picture. When female plants are over there and male plants are over here, ripe pollen and receptive stigmas are

often out of synch; that is, pollen ripens too early or too late to fertilize many or even any female flowers. When flowering populations are large, enough pollen will be ripe at enough times to fertilize enough flowers to ensure reproduction. Thus, right in the Dunes, right in our own backyard, island biogeography is at work.

In 2006, Dan became a marriage broker. In my North Central Porter County yard, which borders IDNL, flourishes an irregular 20 x 20-inch patch of very well fenced T.A., perhaps the largest around. In 2005, its numerous flowers, all female, did not fruit. The nearest T.A. plant is a non-bloomer over a thousand feet away. Dan took pollen from Eastern Porter T.A. and hand-pollinated five flowers in my T.A. patch. After using a tiny brush to remove pollen and attach it to the stigma, Dan found that plucking off an anther with tweezers and rubbing it over the stigma worked better. The result: three capsules containing viable seed.



Dan also pollinated some Eastern Porter County

plants and obtained two seed capsules. Dan put the seeds in cold storage (stratification) until time to germinate them in mid-February in a mix of peaty, organic sand with some soil from the Eastern Porter County habitat to provide the necessary mycorrhizal fungus, and perhaps a commercial bacterium. Dan hopes for flowering plants in two or three years. These will probably be installed near existing plants.

What about cuttings? Dan thinks our populations are too scarce and that cuttings grow too slowly. Transplanting T.A. to get males and females closer together would almost certainly kill the transplants because of mycorrhizal fungus problems.

My hearty thanks to Dr. Dan Mason of the Indiana Dunes National Lakeshore for his help with this article. Any errors are mine.
—Barbara E. Plampin



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On the Trail at Twin Swamps

Michael Homoya, IDNR Division of Nature Preserves



A clear, sunny sky with temps in the 70s set the mood for INPAWS' May 19 trek into one of Indiana's premier nature preserves. And it only got better, as nowhere else in the state can you see such a place as this.

Twin Swamps Nature Preserve, one of over 200 nature preserves owned and/or dedicated by the Indiana DNR Division of Nature Preserves, is near the confluence of the Wabash and Ohio Rivers in extreme southwestern Indiana. It's home to an amazing array of plants and animals, many of which have affinities to the low country of the deep south. Some of the classics include bald cypress, featherfoil, spiderlily, social sedge, fish crow, and mole salamander.

Our group of 21, led by Division of Nature Preserves botanist Michael Homoya, embarked on the adventure at the eastern edge of the preserve, from where they followed a well-maintained loop trail that passed through all the preserve's major natural community types. We first encountered a floodplain forest dominated by red maple (*Acer rubrum*) and sweet gum (*Liquidambar styraciflua*). From there we continued westward, gradually increasing in elevation along the way. The increase may have been imperceptible to the eye, but the changes in vegetation were quite noticeable. The floodplain graded into a flatwoods community, and before we knew it a whole new set of species lay before us. Here the dominants were cherrybark oak (*Quercus pagoda*), shagbark hickory (*Carya ovata*), and, within a localized area, post oak (*Quercus stellata*). There were sedges and grasses

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INDIANA NATIVE PLANT and Wildflower Society

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All are invited to submit articles, news items, and event postings of interest to our membership. Acceptance for publication is at the discretion of the editor. INPAWS welcomes opposing viewpoints.

Please submit text and photos via e-mail to wwford@comcast.net or via land mail to INPAWS JOURNAL, 6911 Cabernet Way, Indianapolis IN 46278.

Submission deadlines for specific issues are as follows:

Spring
February 23 for April 1 mailing

Summer
May 23 for July 1 mailing

Autumn
August 23 for October 1 mailing

Winter
November 23 for January 1 mailing

INPAWS Mission

To promote the appreciation, preservation, conservation, utilization and scientific study of the flora native to Indiana and to educate the public about the value, beauty, diversity, and environmental importance of indigenous vegetation.

Membership

INPAWS is a not-for-profit 501(c)(3) organization open to the public. For membership information, visit www.inpaws.org.

News and Views

Information to be shared with INPAWS members may be directed to membership@inpaws.org.

Officers

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Can We Talk?

Karen Hartlep

Greetings Native Plant Enthusiasts!

Suffering through writer's block, an over-crowded schedule (isn't everyone's?), and the Journal's relentless deadline approaching, I slogged through my previous letters to see if some simmering undercurrent of an idea would magically blossom into a full column. No luck, but I did realize that my previous ramblings were all about what I was thinking and what we have done, are doing, or are planning. I've never asked what **you** want out of our Society! As my teenage daughter would say, "How rude!"

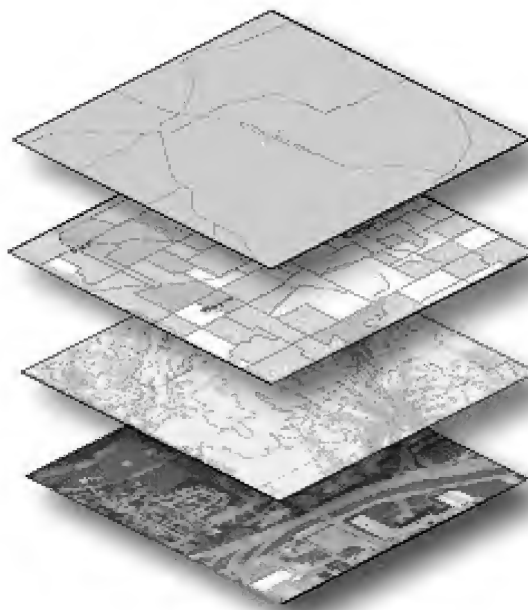
We have a pretty small core group who meet and talk regularly, but it seems we don't hear anything from the vast majority of our members. We need your input so as to serve our members in a timely, exciting, and relevant way. Please let us know what's working, what's not; your suggestions on how to improve existing programs; what we should do more or less of; ideas for brand new, crazy programs or activities; whatever's on your mind....

Phone any of us on the INPAWS Council, or send e-mail comments to **membership@inpaws.org** and they will be distributed to the proper Council officer or committee chair.

On a related note, if you are already thinking of firing off an e-mail to us, maybe you're the kind of engaged member we need to help guide INPAWS' course. Perhaps you know someone who could serve as an officer for the next two-year term, or perhaps you would consider doing so yourself. A nominating committee has formed—Tom Hohman, Wendy Ford, and Shirley Cain have signed on—so let them know of your interest or your suggested candidate.

Looking forward to hearing from you!

Karen



INPAWS PARTNERS

Indiana Conservation Tool

Enlightened planners are convinced that improving quality of life, natural habitat, and recreation opportunities will attract new business to Indiana. But which areas in Indiana have high wildlife and wild plant conservation potential? And how can we build support and plans to protect them?

The Indiana Biodiversity Initiative (IBI), a collaboration of government, academic, and private planners and conservation scientists, has developed a new software tool to help answer such questions. It's the Indiana Conservation Tool, a GIS (geographic information system) package that will help conservation planners capitalize on Indiana's natural heritage to improve the state's economy.

GIS works on the principle of layers. Geographical maps of streets, buildings, neighborhoods, even subterranean infrastructure are superimposed. Then information stored in databases is linked to specific places or locations, enabling users to query the data and present the answers in maps, tables, and other graphic representations to support decision making and problem solving.

To identify areas with high conservation potential, the IBI started with existing protected areas like parks and forests, and added areas with the highest concentration of plant communities and rare species. Then they used models on selected wildlife to identify areas with enough habitat for species with larger spatial needs. Finally, they identified corridors—narrow strips of land that connect larger areas to allow animals to move among conservation areas.

The Indiana Conservation Tool combines maps of high-conservation-potential areas with layers of aerial photography, topography, county boundaries, ecoregions, and roads, and provides links to conservation resources in each area of the map.

IBI offers workshops on identifying and prioritizing conservation potential using the map tools and the accompanying data. CDs are provided with all materials at no cost.

For information about the Indiana Conservation Tool, visit www.in.gov/igic/realworld/econconserve.html

Twin Swamps, continued from page 1

aplenty, but not many showy flowering plants. Smooth phlox (*Phlox glaberrima*) was clearly the most colorful.

The next community encountered—the moist upland forest—was where we noted many of the same species found in similar conditions elsewhere in the state, such as tulip tree (*Liriodendron tulipifera*), white oak (*Quercus alba*), and paw paw (*Asimina triloba*). Of interest was the occurrence of a state threatened species of bergamot (*Monarda bradburiana*) and a rarely seen flowering specimen of Virginia snakeroot (*Aristolochia serpentaria*).

Once atop the upland forest ridge we could see the awaited prize—the

cypress swamp. We ventured into the swamp on a boardwalk to inspect the myriad life up close and personal. In addition to bald cypress (*Taxodium distichum*), common trees and shrubs observed were swamp cottonwood (*Populus heterophylla*), red maple (*Acer rubrum*), and buttonbush (*Cephalanthus occidentalis*). Floating on the swamp water were duckweeds (*Lemna* spp.) and an interesting little plant called mosquito fern (*Azolla caroliniana*). It is certainly the smallest fern species in the state. In some years, featherfoil (*Hottonia inflata*) can be seen in the deeper portions of the swamp, but apparently not this year. Featherfoil is a winter annual and grows only when the conditions are just right for germination.

After leaving the swamp we continued on the loop trail to the “twin”

swamp. It's not an identical twin, however, as this swamp is not as deep, and bald cypress is absent. Dominant canopy trees noted were overcup oak (*Quercus lyrata*), pin oak (*Q. palustris*), swamp white oak (*Q. bicolor*), sweet gum, and red maple. On the edge of the swamp were leaves of perhaps the most spectacular of the preserve's wildflowers—the spider lily (*Hymenocallis occidentalis*). It doesn't bloom until late summer, so a return trip is in order to see this beauty.

For those who couldn't make it down to Twin Swamps for the INPAWS hike, you can still visit the preserve on your own. Check the IDNR Division of Nature Preserves web site for directions: www.in.gov/dnr/naturepr/npdirectory/preserves/twinswamps.html.



Twin Swamps photos by Barbara Homoya.

Upcoming INPAWS Hikes

Ambler Flatwoods and Springfield Fen (LaPorte County), August 11

Edge of Appalachia; Shawnee State Forest (Adams and Scioto Counties, Ohio), September 8 & 9

Pedestal Rock Nature Preserve (Parke County), October 20

Overcup oak (*Quercus lyrata*) leaf and acorns. Photo courtesy of Missouri State University Biology Department.



Ohio Field Trip Preview

On the weekend of September 8-9, INPAWS will join members of the Ohio Native Plant Society for a weekend of “extreme” botanizing in the ruggedly beautiful landscape of south-central Ohio (Adams and Scioto Counties). Leader Dan Boone has promised interesting natural communities and lots of plants, many that will be new to us Hoosiers.

Some of the areas to be visited, known collectively as the Edge of Appalachia, offer barrens and dolomite cliffs hosting plants that prefer alkaline substrates. For contrast, we will also hike in Shawnee State Forest where acidic conditions prevail and present a different selection of plants.

Plants we expect to see on the trip include: earleaf foxglove (*Agalinis auriculata*); white cedar (*Thuja occidentalis*) on cliffs(!); mountain lover (*Paxistima canbyi*); creeping aster (*Eurybia surculosa*); stout goldenrod (*Solidago squarrosa*); and three-leaved rattlesnake root (*Prenanthes trifoliolata*).

The group will gather at Bill's Place, Lynx, Ohio, at 10:00 a.m. Saturday, September 8, and proceed to the Edge of Appalachia. Sunday we will explore Shawnee State.

Arrangements for transportation and lodging are on your own. Rooms are available at the Shawnee State Park Lodge as well as cabins and campsites in the park. Now would be a good time to make a reservation. (You may cancel up to 14 days before the reservation dates without penalty.)

Given the distance to Lynx, Ohio, it would be advisable to make arrangements for both Friday and Saturday nights, September 7 and 8. The toll-free number for the lodge is 1-800-282-7275. For more information about the park and facilities, visit www.dnr.state.oh.us/parks/parks/shawnee.htm.

There is also a Comfort Inn, 937-386-2511, conveniently located in Seaman, Ohio, at the intersection of SR 32 and SR 247.

Welcome to Our New INPAWS Members

CENTRAL

Jaymie Berg
Michael Campbell
Jan Chapman
John & Pamela Cole
Debarah Crowe
Colleen Geisel
Daniel & Nadia Hayford
Karen Jameson
Darren, Tabitha, & Daniela Klem
Jo Ann Klooz
Don Meerhoff
Mudge Morris
Elizabeth Najav
Karen Nichols
Ken Remenschneider
Nancy K Rice
Barbara & Dennis Zupan

EAST

Greg Cline
Justin C. Krause Household

NORTHEAST

Amanda & Benjamin Hess Family
Marla McAfee
Laura Stine

SOUTH

Yvonne M. Cripps
Linda K. Edgerton
Deborah Farrell
Kristin Rust
Scott & Jill Stowers
Lisa Weiser

WEST

Barbara A. Foster
Jean Jamsa

INPAWS to the Rescue?

Is a natural site near you in imminent danger of falling to the bulldozer? Please let INPAWS know. We can organize a team to help you rescue the native plants. With advance notice, we may be able to support you in averting destructive development. Keep your eyes peeled for conservation opportunities in your area. Tip us off at membership@inpaws.org.

Indiana Authorities

Rebecca Dolan, PhD, Friesner Herbarium, Butler University

Last issue, we learned that the “authority” name following a latin binomial signifies the plant given this name by a specific person and carries important historical information.

Following are some of the most common abbreviated authority names you will run across when looking at names of plants that grow in Indiana. This doesn't mean that species with these authority names were first collected in the state, only that the plant grows here.

Michx. = Andrè Michaux (1746–1802)

Botanist, explorer, and plant collector, he worked for the French Government in the late 1700's. After losing his wife of 11 months to childbirth, he traveled across the globe. Following the American Revolution, he was charged with exploring America's forests to look for new trees to help reforest France. Lumber was in short supply due to its use in building war ships for a long, ongoing fight with England. Michaux visited luminaries of the time, including Benjamin Franklin and George Washington. He explored mostly in the southeast, living for a while in Charleston, South Carolina.

More info: <http://www.michaux.org/michaux.htm>

Raf. = Constantine Samuel Rafinesque (1783–1840)

Born in Turkey to French and German parents, he first came to the United States as a 19-year-old, working for a mercantile house in Philadelphia. He became interested in natural history and in 1818 took a collecting trip west along the Ohio River. He eventually became a professor at Transylvania University in Pennsylvania. He described hundreds of animals and thousands of plants.

More info: <http://faculty.evansville.edu/ck6/bstud/rafin.html>

Muhl. = Gotthilf Hunrich Ernst Muhlenberg (1753–1815)

Lutheran minister and self-taught botanist from a prominent eastern Pennsylvania family. His father and uncles were patriots in the Revolutionary War, and as a boy he himself had a harrowing escape from the British. He did not travel far from his home in Lancaster County, but he had a great influence on early botany by working with others and publishing species lists for local areas that included native and introduced plants. He often did not use what is now considered standard nomenclature; nonetheless, at least 150 plant names are attributed to him.

http://www.tortoisereserve.org/Research/Muhlenberg_Body2.html

Nutt. = Thomas Nuttall (1786–1859)

Born in England, Nuttall was an explorer, botanist, printer, and professor. In 1810, he explored and collected in the Great Lakes region. In 1811, he traveled the Missouri River, covering much of the same ground as Lewis and Clark had a few years earlier. Nuttall collected many of the same plants but was the first to describe them, in part due to the loss of many of Lewis and Clark's specimens.

<http://www.lewis-clark.org/content/content-article.asp?ArticleID=498>

A. Gray = Asa Gray (1810-1888)

Asa Gray was born in New York and trained as a doctor before becoming a professor of natural history at Harvard. With John Torrey, he published an influential botanical text, *Manual of the Botany of the Northern United States*, which helped establish modern systematic botany. Gray received plant collections from official United States government expeditions to then under-explored areas like parts of Texas. His *Botany* was the first place plants collected on these missions were described.

<http://famousamericans.net/asagray/>



Asa Gray. Photo from Harvard University Herbaria, www.huh.harvard.edu/libraries/asa/asabio.html.

Watch The Leaves!

Barbara E. Plampin, PhD
Shirley Heinze Land Trust

I like those feathery-flowered composites, the Eupatoriums, for their contrasts, their folklore, and, in one or two instances, their challenges. Eight of Indiana's thirteen species flourish in the dunes, mid-June to late October, in damp to sandy habitats.

For their vigor, the up-to-twelve-foot, purple-flowered, whorled-leaved Joe Pyes are designated "weed." (Joe Pye was an Indian doctor who used purple [sweetscented] Joe Pye weed (*E. purpureum*), with its domed inflorescences, to cure typhus "by copious perspiration.") Its flattish-headed cousin, spotted JP (*E. maculatum*) has spotted, pithy stems. Another cousin is the rarer hollow JP (*E. fistulosum*). As cutting protected plants is illegal, one must judiciously pinch stems for their "give" or distinguish between the sharply serrated leaves of spotted and the obtusely serrated leaves of the hollow. I think hollow might make as good drinking straws as those cut from purple by the Cherokees.

Shorter, but stately, the white-flowered common boneset (*E. perfoliatum*) bears leaves seemingly pierced by the stem. (Boneset earned its name by curing a body-shaking form of influenza in which the victims shook so hard that it seemed their bones would break.) Far less satisfactory was the petioled-leaved white snakeroot (*E. rugosum*) which allegedly killed Lincoln's mother after she drank milk from cows pastured upon it. Other whites, tall boneset (*E. altissimum*) with opposite, short-petioled leaves and late boneset (*E. serotinum*) with longer-petioled leaves, are rather weedy. (*Serotina* means late. Might make a good name for some children?)

Native elsewhere in Indiana, the largely low-growing, petioled-leaved, blue mistflower (*E. coelestinum*) makes an attractive sight along abandoned roads and can make a welcome late season display, sometimes self-sowing, in the garden.

Though not state listed, white-flowered upland boneset (*E. sessilifolium brittianum*) with its sessile (no petioles), opposite leaves is the real challenge. I was lucky enough to find it on August 30, 1990, after a 63-year absence from the Dunes. Last reported from this location by M.W. Lyon, Jr., in 1927, it was on my wish list where I reviewed it annually. The site: a supposedly "unbuildable" lot consisting of a steep dune spine overlooking Lake Michigan, which had gotten itself sold. Unable to resist plant snooping, a neighbor and I just lucked upon the plant. No trespassing required, after all: the plant grew at the dune base where neighbors parked their cars.

Before flowering, upland boneset superficially resembles woodland sunflower (*Helianthus divaricatus*), but upland boneset leaves are more nearly ovate.

Turns out the plant was relatively frequent under high shade here and in the adjacent Indiana Dunes National Lakeshore. It grows with basswood (*Tilia americana*), dwarf hackberry (*Celtis tenuifolia*), witch hazel (*Hamamelis virginiana*), sand fragrant sumac (*Rhus aromatica arenaria*), blue-stemmed goldenrod (*Solidago*



Common boneset (*Eupatorium perfoliatum*). Photo by Penny Stritch.

caesia), and white snakeroot (*E. rugosum*). Flowers of the two *Eupatoriums* are quite similar.

However, when the DNR's Tom Post asked me to "find him some" in another historically known site, Indiana Dunes State Park, no luck. Two years ago, I sighted upland boneset in oak savanna well south of the Lake on a long hike on which I got well and truly lost. But that's another story.

The "unbuildable" lot remains unbuilt; it's changed hands several time. Upland boneset appears to have a permanent home.

Notes

(1) If you find an alternate-leaved "boneset," it's false boneset (*Kuhnia eupatorioides corymbulosa*), a yellowish-flowered plant that likes foredunes. (2) Trailing arbutus (*Epigaea repens*) appears to be improving in the Dunes. Some plants are forming capsules without hand pollination.

Some Books

Ericksen-Brown, Charlotte. *Medicinal and Other Uses of North American Plants*. Dover Publications, 1989 (1979).

Lyon, M.W., Jr. List of Flowering Plants and Ferns in the Dunes State Park and Vicinity, Porter County, Indiana. *American Midland Naturalist*. 1927. 10:245-295. One of the best tools for the Dunes plant hunter.

Binford Blvd. Volunteers

The Proposal

In February, the INPAWS Grants and Awards Committee awarded \$500 to Binford Redevelopment & Growth (BRAG), Inc., submitted by Jane M. Lommel. Their proposal: to purchase a mix of native Indiana perennials and grasses to cover 800 square feet in the public right of way at the northeast intersection of Binford Boulevard and Rucker Road in Marion County. They called their plan the "Binford Boulevard Native Prairie Habitat Project."

In addition to beautifying an urban area, these plantings at a prominent intersection were planned to give visibility to Indiana native plants and, by involving many volunteers, to inspire greater use of native plants in public and private landscaping projects.

The awards committee said it was pleased with this group's efforts to complement the native plantings already completed on 1.5 miles of Binford Boulevard and to provide the public with a native plant alternative to mowed grass in public right of ways!



Clearing and planting of this muddy public right of way involved numerous volunteers in giving visibility to Indiana native plants. Photos by Jane Lommel and Karen Hartlep.

The Implementation

On Saturday, April 28, work began at the Binford and Rucker site. Volunteers grubbed out honeysuckle, poison ivy, and other weeds, spread topsoil, and picked up trash. On hand were about twenty 10- to 12-year-old girls from

Wheeler Mission Ministry performing a Community Service project; students from Chatard High School; BRAG volunteers; Stan and Carolyn Charles, the owners of Stan's Sign Design, and some of their employees; and several INPAWS volunteers.

Three weeks later, on Sunday, May 20, an enthusiastic group of Stan's Signs employees and their families and friends joined INPAWS volunteers Dan and Sophia Anderson,

Janice Gustaferrero, brand new member Steve Van Zant, and Karen Hartlep to install mulch and nearly 700 native herbaceous perennials funded by the INPAWS grant and another grant from Keep Indianapolis Beautiful Inc.

The plants were grown by Spence Restoration Nursery, Muncie, and selected for this wet site by Kevin Tungesvick of Spence after a site visit.



Earn BRAGging Rights



The Plants

Among the plant selections were:

Aster nova-angliae
New England aster

Carex vulpinoidea
Fox sedge

Heliopsis helianthoides
False sunflower

Iris virginica shrevei
Blue flag

Liatris spicata
Rough blazing star

Panicum virgatum
Switchgrass

Penstemon digitalis
Foxglove penstemon

Rudbeckia subtomentosa
Sweet black-eyed Susan

Vernonia fasciculata
Smooth ironweed



The Payoff

The grand finale was the installation of a beautiful sign bearing the logos of INPAWS, BRAG, Spence Restoration Nursery, and Stan's Sign Design.

The sign and this native planting at the northeast gateway to Indianapolis will be seen from more than 60,000 cars per day.

Visit www.binford71.org for more information about the projects of Binford Redevelopment & Growth.

Another Successful Plant Sale and Auction!

The INPAWS Plant Sale and Auction was a success again this year thanks to the generous donations of commercial nurseries and the efforts of many members who donated plants and volunteered their time and expertise. Thank you to all who helped in any way. You did a wonderful job!

Special thanks go to Mike Stelts, our auctioneer, and to Hilary Cox and Sue Nord Peiffer for their help in making the auction such a success. We also thank the Indiana School for the Blind for their assistance while allowing us the use of their campus. Everything came together to make this a profitable event for INPAWS and an educational and entertaining event for all who participated.

The number of plants donated by INPAWS members is truly amazing. Most are dug from their own gardens, but some members actually start plants from seed and then bring them to the sale. The willingness to share is one of the things that makes INPAWS such a remarkable organization.

We welcome any comments or suggestions for next year's sale and auction. Contact Tom Hohman at hohmantr@aol.com or Janice Gustaferro at jan_in@egix.net.

INPAWS gratefully acknowledges the following firms and individuals who made this event a success. We apologize if we have inadvertently left any names off this list.

COMMERCIAL NURSERIES

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Altum's Horticultural Center
Beineke's Nursery
JF New's Native Plant Nursery
C. M. Hobbs & Sons, Inc.
Mark M. Holeman, Inc.
Munchkin Nursery & Gardens, LLC
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Doris & Bob Thomas
John Watson
Heather Wickens
Betsy & George Wilson
Reni Winter
Phyllis Zimmermann
Susan Zellers

Auctioneer Mike Stelts, assisted by Hilary Cox and Sue Nord Peiffer. Photo by Marilyn Spurgeon.



IN MEMORIAM

Letha Bolles Queisser



Letha Queisser was known as Indiana's Wildflower Lady. After she died this past winter, many friends chose to honor her by giving memorial gifts to the Indiana Native Plant and Wildflower Society.

Letha and I were members of the Trailing Arbutus Garden Club. Letha, who earned a degree in botany from Indiana University, led dozens of friends and family members on wildflower hikes.

I well remember such a hike in Marrott Park, a hilly old growth forest just north of Broad Ripple in Indianapolis. She described, for the first time for me, the difference between Dutchmen's breeches and

squirrel corn. Later, as our city expanded and put pressure on green spaces in central Indiana, Letha gathered as many gardeners as she could find and led us into forests threatened by development.

With shovels, trowels, and plastic bags, we trudged into one precious woodland after another to try and preserve fragments of our treasured heritage of spring ephemerals. The lush wildflower garden that thrives in the dense shade of my beech trees began with plants rescued from what we called Tutweiler Woods at 96th and Meridian.

Each spring, in April, I received a call from Letha asking that I please let her know when my lilies-of-the-valley were in bloom. She wanted to pick some from my overly large patch to give to her beloved friends and family. This past winter she asked that I think of her when the lilies-of-the-valley bloomed again. I did, with deep sadness, but also with gratitude for the woman who first opened my eyes to the beauty of our native woodland plants.

Ruth Ann Ingraham



Donations to INPAWS in Memory of Letha Queisser

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A Rare Find in Indiana

Sourwood *Oxydendrum arboreum* (L.) DC.

When the heath family (Ericaceae) is mentioned, we usually think of such broad-leaved evergreen or semi-evergreen shrubs as the beautifully flowering rhododendron, mountain laurel, or azalea, or such fruiting shrubs as blueberry, cranberry, huckleberry, or bearberry. Largely evergreen ground-layer herbs as pyrola or pipsissewa may also come to mind. In North America, Ericaceous tree species are few. Eastern U.S. has a single species, sourwood, not counting the occasional mountain laurel or rhododendron that reaches tree size. Three lovely madrone species are heath family trees in Western U.S., primarily in Texas, Arizona, and California.

Sourwood, also called sorrel tree, is a handsome native hardwood tree species that is rather widespread in Eastern U.S., ranging from Pennsylvania westward to southern Indiana and Illinois, thence south across western Kentucky and Tennessee to Louisiana, Mississippi, Alabama, and the panhandle of Florida. Sourwood reaches its best development in the Great Smoky Mountains, southern Appalachians, and the Cumberland Plateau of eastern Kentucky and Tennessee, ascending to about 3,500 feet in the mountains.

In natural communities, it just reaches into Indiana in the



Photos courtesy of University of Rhode Island Cooperative Extension (habit) and Greenwood Nursery (detail).

two Ohio River border counties of Perry and Harrison. My good friend and outstanding Hoosier field botanist, Mike Homoya, informs me that the IDNR Division of Nature Preserves has record of only 12 present-day occurrences in Indiana, all but one in Perry County. Most populations are small, in the range

of 10-50 individual trees. The largest stand (in Harrison County) has approximately 100-150 trees located on a sandstone cliff overlooking the Ohio River.

The species is typically found on dry-mesic to dry upland slopes and ridges, often on soils derived from sandstone, and often associated with oaks, hickories, gums, and occasionally American beech or hemlock. Rarely, if ever, a large member of the forest canopy—it is usually less than 60 feet tall and 20 inches dbh—sourwood is still a distinctive, lovely tree in all seasons.

In winter, its drooping, somewhat contorted branches and the gray bark tinged with red in the deep longitudinal



furrows are somewhat reminiscent of sassafras, but the paniculate fruiting clusters that are often retained well into winter definitely say sourwood to the careful observer.

In spring the wondrously fresh-looking long (5-7 inch) strap-like glossy yellow-green leaves that are entire (or nearly so) separate the tree from all others. Other leaf characteristics, incidentally, are the basis for the tree's common name, sourwood. The leaves are acidulous, hence cooling and refreshing to the mouth and tongue, and are sometimes chewed by hikers to quench their thirst during hot, humid treks. Teas from sourwood leaves, containing their natural coolant, were once used in mountain medicine to lower fevers in children.

In summer, sourwood trees are resplendent in blossoms. June or July is the time when the branch tips of the entire tree crown are covered with sprays of tiny lily-of-the-valley-like, urn-shaped glossy white flowers. Their collective fragrance attracts multitudes of honey bees, whose combined hum announces the presence of sourwood long before you see the tree. Sourwood is one of the most prized of all wild honeys, quite the contrast to mountain laurel and rhododendron honeys, which are toxic.

A couple of years ago while visiting the Cades Cove Visitor Center in the Great Smokies, I found a pint jar of sourwood honey in the comb, and savored it for weeks by careful rationing.

Autumn is when sourwood trees reach their greatest glory. In the long-slanted October sunlight, the long leaves turn the most vivid of scarlets (see page 211 in *101 Trees of Indiana*). It is then

that sourwood crowns fairly shout with color in preparation for the fall dance of gusty November.

The wood is quite hard and heavy (at 46+ pounds /cubic foot), comparable to several of the oaks and hickories, but it is little used because of the species' generally small size and the fact that it often occurs in small populations at a given site. It is used locally in turnery, for tool handles, and the red-brown, fine-grained wood makes a pretty paneling. In years past, it was the preferred wood for wooden machinery bearings, such as the "boxings" in which horse-drawn disk-harrows rotated, lubricated with axle grease.

Mountain farmers also once used slender sourwood trunks as runners for their farm sleds, the natural crooks in the tree forming the up-turned ends of the sled runners.

But the real promise for sourwood's future is its use as an ornamental tree. Its generally small size makes it suitable for most lawns or landscaping sites, and it is hardy at least as far north as Indianapolis, especially if given some shelter from cold north or westerly winds.

I know of one tree in Terre Haute that is about 8 or 10 inches in diameter, and some 20-25 feet tall. I drive by the site a few times each year just to admire this lovely tree.

The Farmers' Market Book

Growing Food, Cultivating Community



Jennifer Meta Robinson and J. A. Hartenfeld

Photographs by Dan Schlapbach and Jennifer Roebuck

**Jennifer Meta Robinson
and J. A. Hartenfeld**

**Photographs and Illustrations by
Dan Schlapbach and Jennifer Roebuck**

Farmers' markets provide a rewarding intersection of rural and urban lives, sustaining and healing both our communities and our relationship to the land. By examining this national phenomenon through the story of the market in Bloomington, Indiana, Robinson and Hartenfeld consider the social, ecological, and economic power of farmers' markets generally.

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Flora of North America Reaches Halfway Mark

More than 900 botanists working as part of the *Flora of North America* (FNA) project have now cataloged over half the genera of higher plants native or naturalized in North America north of Mexico. They hope to finish by 2011.

This is the first comprehensive, scientifically authoritative publication treating the 20,000+ species of plants in the U.S. and Canada together.

Thirteen volumes have been published (including an introductory volume), one is being printed, and publication of two more is expected this year, out of a total of 30.

The second volume of grasses (Poaceae, Volume 24) came out in early 2007, completing the monocotyledonous plants. The first of three volumes on mosses, liverworts, and hornworts is in press.

Especially exciting was the publication of all three volumes on the sunflower family (Asteraceae, Vols. 19, 20, 21) in 2006. The treatments include identification keys, nomenclatural information, common names, descriptions, distributions (including maps), and discussions. Every genus and one-third to one-sixth of the species are illustrated.

FNA makes many lifetimes of study, and presents the best knowledge about regional floras available in print and electronically.

Editorial centers are located at Missouri Botanical Garden (INPAWS' own Kay Yatskievych is working on it there), the Hunt Institute for Botanical Documentation, Université de Montréal, and University of Kansas. Authors base their work on knowledge of plants in the field, herbarium specimens, and review of the literature. The project also has a network of regional

reviewers. Authors and editors work as volunteers; grants and donations support technical editors and botanical illustrators.

The books are published by Oxford University Press—U.S. and currently are on sale at the discounted price of \$76 per volume (available at www.oup.com/us/fnaserie with promo code 25316). More information on *Flora of North America* and treatments from published volumes are available at www.fna.org.

Your Opportunity To Serve?

The following positions are currently open. Is it time for you to step up in service of INPAWS?

- Council Treasurer
- Speakers Bureau Chair

Also, a Nomination Committee has been formed to present a slate of officers for election at the November 3 Annual Conference.

Please indicate your interest or submit suggestions to membership@inpaws.org.

Ohio Calling

Ohio Prairie Association invites anyone from Indiana to attend their annual state prairie conference. The conference is July 27-28 in Hiram, Ohio, which is in Portage County in northeastern Ohio. For more information, visit www.ohioprairie.org.

“Preserving Nature” Art Sale

Fifteen of Indiana's finest landscape artists have produced paintings from the nature preserves of the Central Indiana Land Trust. These paintings, which have been displayed at public venues in Central Indiana as part of the Preserving Nature Art Show, will be sold to the public at Wickliffe & Associates, 12232 Hancock Street, Carmel.

Friday, July 27 Exclusive Sale

6:00 to 9:00 p.m. Tickets \$35.

Saturday, July 28 Open Sale 10:00

a.m. to 4:00 p.m. Free admission, no reservations needed.

For more information, visit www.cilti.org or call 317-631-5263.

Seeking Readers

To enable good use of our organization's historical records, Ruth Ann Ingraham, INPAWS Historian, seeks volunteers who will adopt and read a year or more of our organization's official documents that begin in 1993. The goal is to create a year-by-year synopsis of decisions, events, income/expenses, membership, etc., with reference to dated materials. If this interests you, contact Ruth Ann at rai38@sbcglobal.net or 317-253-3863.



Thanks to All Our INPAWS Booth Volunteers

Dan and Sophia Anderson would like to thank all who helped out with the INPAWS booth at the Flower and Patio Show, Earth Day, and Orchard in Bloom. It is through events like these that INPAWS is becoming better known throughout our area.

Each year, it seems, more people develop an interest in native plants and invasives. Through our outreach efforts, we hope to add to our membership. If you are interested in free admission to some interesting events, and a chance to share your thoughts about native plants with others, please contact Dan Anderson at danjand1@sbcglobal.net.

Raising Awareness of Invasive Species

"It's a tortuously slow process to move people forward on the issue of invasive species in Indiana," said Invasives Committee chair Ellen Jacquart in e-mails circulating among INPAWS members after Governor Mitch Daniels proclaimed June 2007 Invasive Species Awareness Month. "No one seems to know what they are or why they pose a problem."

Though some attributed political motives to Gov. Daniels' newfound interest in invasives, Jacquart said his willingness to recognize state efforts to curb invasives was a step in the right direction.

The real impact, she said, would come from a series of events conducted around the state in June to inform people about the problem. Also, the legislature resolved to appoint a task force to recommend what Indiana needs to do to address invasive species. "That, plus the public becoming better informed and thus supportive

of initiatives to abate invasive species problems, has the potential to make a real difference," said Jacquart.

We thank INPAWS member Lynn Dennis of The Nature Conservancy for her role in prompting the Governor's proclamation. For more information, visit www.nature.org/wherewework/northamerica/states/indiana.

To download a four-color flyer on the major invasives to watch for in your area, visit the Midwest Invasive Plant Network website at www.mipn.org/detectionresponse.html.

2007 INPAWS Annual Conference

Our fourteenth annual conference will be held Saturday, November 3, at the Athenaeum in downtown Indianapolis. The conference will feature keynote speakers Dr. Loren Rieseberg, a MacArthur fellow and sunflower specialist from Indiana University and Tracy DiSabato-Aust, author of *The Well-Tended Perennial Garden* and *The Well-Designed Mixed Garden*.

After an inspiring day of speakers, book signings, and discussion, attendees will be able to choose from two late-afternoon field trips. Dave Benson will lead a walk through the 55-acre wetland and lowland forest at Marian College EcoLab, while Robert Barr will show us ARBOR, a restored riparian corridor along the nearby White River.

To maintain the low registration fees at this increasingly costly event, we will be seeking raffle and silent auction donations throughout the next few months. Please consider donating items in excellent condition, including plants, books, and art. We will solicit gift certificates and other items from area organizations.

Volunteers are needed to help with program design, materials production, and publicity, as well as to successfully present this event in November. Please contact co-chairs Dawn Stelts at dawn@stelts.com or Kathleen Hartman at khartman@greenleaf-fg.com.

Save the Date

November 3, INPAWS Annual Conference, Indianapolis

See also INPAWS Hikes on page 5

Deadline for Fall Issue of INPAWS Journal: August 23

Four Grants Awarded

The INPAWS Small Grants & Awards Committee reviewed six proposals submitted by the February 1, 2007, deadline and made four awards totaling \$1,500. Three are described here. The fourth is featured in an article on page 8. Watch for proposal guidelines in the fall issue of *INPAWS Journal* or visit www.inpaws.org.

Research on Prairie Soil in Restoration Efforts

Proposal by Elizabeth Middleton, PhD candidate at Indiana University, Bloomington. Awarded \$315 to purchase one pound of *Baptisia leucantha* (white wild indigo) seed for her research project, *From row crop to prairie: Using the prairie soil community to enhance prairie restoration efforts*, which will take place at the Kankakee Sands Restoration in Newton County, Indiana, and run from May 2007 to August 2009.

The findings may prove significant not only for prairie restoration efforts, but also for the successful establishment of native prairie plantings in residential and other settings.

Comments: The committee is pleased to lend INPAWS support to studies related to conserving Indiana's native prairie plant diversity.

Naturalization at Karst Farm Park

Proposal by Cathy Meyer, Naturalist, Monroe County Parks and Recreation Department. Awarded \$500 to purchase prairie seed mix for 1-1/4 acres to replace mowed areas with native plantings in a public park. In so doing, the project will provide habitat, educational opportunities, and beauty.

Comments: The committee applauds this effort to create natural areas among the many recreational areas in the park. These natural areas will give park visitors a chance to appreciate and become aware of the benefits of landscaping with native plants and will provide a place for park programs on butterflies, bird study, and plant identification—adding to the public's knowledge about the value of native plants not only to people but also to local wildlife.

Native Plants in the Butterfly Garden

Proposal by Nancy Mattson, Friends of Turkey Run and Shades State Parks. Awarded \$185 to pay for permanent, reusable laminated plant identification sheets describing the plants in the butterfly garden at Turkey Run State Park Nature Center in Parke County, Indiana.

The Friends group will restore and enhance the Nature Center's native plant butterfly garden, then use it to teach visitors about the native plants in the garden. The laminated sheets will supplement tours and programs and will also be available to the park's many visitors to the butterfly garden.

Comments: The committee supports the group's restoration effort and their educational goal: to teach people about native plants and undo the perception that native plants are weedy.



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EDUCATING THE NEXT GENERATION

Gwow, Twees!

How Avon Outdoor Learning Center Instills a Love of Nature

When I met Carol Ford at the Annual INPAWS Conference in 2004, I was impressed with her enthusiasm for the environmental education program she was showcasing in her booth. I interviewed Carol last fall about her role as coordinator for the Outdoor Learning Center. You'll find it in Avon, Indiana, off U.S. 36, south of the administration building and south-east of White Oak Elementary School, just behind Maple Elementary School. —Wendy Ford, Editor, INPAWS Journal

INPAWS: How did you get involved in the Outdoor Learning Center?

Carol Ford: When my daughter was entering Maple Elementary in the third grade, I got nose-y. I went over in the summer and introduced myself to Principal Winger and said, "I heard you have an Outdoor Learning Center."

He sent me out in the direction of the gate to see it, and I couldn't find the gate. It was so overgrown with poison ivy—that was one of the few plants that I recognized. I knew nothing about plants and trees. When I finally kicked my way in and started walking around, I was enthralled, I fell in love, and I kept on thinking, "This place could be incredible!" So I began picking away at the fence line and at the trails, making them wide enough for two kids to walk abreast.

That was eleven years ago. I've learned a lot since then. My goal in the beginning was to "leave it all



natural" and only make it safe and accessible. Then one day I went out there for a walk and talk with Kevin Tunesvick [of Spence Restoration Nursery], and Kevin enlightened me. "Your whole learning center is basically one big bush honeysuckle." I had wondered what all those really pretty bushes were, with all those pretty flowers and berries. I had no clue. So I started learning more about honeysuckle and how to get rid of it, and kept picking away at it over the years.

INPAWS: It sounds like a lot of hours. Was this on a volunteer basis?

Ford: Oh yes, but that's okay. It was a place for my sanity. If I got stressed, if I wanted to disappear for a few hours,

that's where I'd be. I'd drag my kids up there, and they loved it too, but it was "Mom's crazy, with all her native plants this and native plants that." After I found out about the invasives there, I started taking as many classes as I possibly could and learning what's what, sitting out there with my ID books trying to figure out, okay, what are these trees, what are these plants,

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INDIANA NATIVE PLANT and Wildflower Society

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INPAWS JOURNAL is published quarterly for members of the Indiana Native Plant and Wildflower Society. Material may be reprinted with the permission of the editor.

All are invited to submit articles, news items, and event postings of interest to our membership. Acceptance for publication is at the discretion of the editor. INPAWS welcomes opposing viewpoints.

Please submit text and photos via e-mail to wwford@comcast.net or via land mail to INPAWS JOURNAL, 6911 Cabernet Way, Indianapolis IN 46278.

Submission deadlines for specific issues are as follows:

Spring
February 23 for April 1 mailing

Summer
May 23 for July 1 mailing

Autumn
August 23 for October 1 mailing

Winter
November 23 for January 1 mailing

INPAWS Mission

To promote the appreciation, preservation, conservation, utilization and scientific study of the flora native to Indiana and to educate the public about the value, beauty, diversity, and environmental importance of indigenous vegetation.

Membership

INPAWS is a not-for-profit 501(c)(3) organization open to the public. For membership information, visit www.inpaws.org.

News and Views

Information to be shared with INPAWS members may be directed to membership@inpaws.org.

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Addressing The Nature Deficit

Karen Hartlep

Greetings Native Plant Enthusiasts!

Richard Louv and his newest book, *Last Child in the Woods*, seem to be hot topics lately. People are talking about "nature deficit disorder," the term Louv coined to describe today's children's disconnection from nature. They're asking what can be done to counteract the influences that created this crisis.

We INPAWS members hardly suffer from this disorder, as we spend most of our leisure time outside, whether hiking in our parks, preserves, and other natural areas or exploring and caring for our own properties. I hope we've managed to pass on enough of our passion for the natural world that our kids aren't afflicted either (although that may not hold; my teenage daughter steadfastly refuses to show an interest in anything I do, but my friends tell me this will pass...).

But what are we doing as an organization to help connect children with nature? Our programs certainly don't cater to children; in fact, I don't remember any of our events even mentioning kids. Looking around at our membership, I don't see many young people. We don't seem to have young families with children on our radar screens, let alone making accommodations for such families, or encouraging them to teach children a love of nature, or making children welcome in the things we do.

This needs to change. What a difference it would make if we had an influx of 20- or 30-somethings into our ranks, young people who used to tag along on hikes with their parents and don't need to be told what becomes of an acorn! I was recently interviewed by a college student interning for a local magazine, and when she saw a fawn in the backyard, nestled down in the groundcover waiting for its mother to return, she asked if my neighbor had a giant chihuahua! Talk about starting from scratch! We have to do better.

I'm happy to report one step in the right direction. Through the generosity of the friends and family of the late Letha Queisser, INPAWS has established the Letha Queisser Memorial Fund for youth environmental education. (See Ruth Ann Ingraham's tribute to Letha in the Summer 2007 issue of *INPAWS Journal*.)

We think it fitting that Letha's memorial fund should work to instill a love of nature in children, as that was one of her passions. Our plan for this fund is to sponsor school field trips throughout the state to natural areas. We envision that INPAWS will either provide from among our ranks, or help to recruit, enthusiastic, passionate, knowledgeable naturalists to lead these adventures; identify suitable natural areas to explore; and connect with school systems and teachers eager to take advantage of this opportunity.

If you feel inspired to help with this new outreach, please contact either me or Tom Hohman. We'd like to get going as soon as possible—we have a lot of catching up to do, and the best time to plant a tree is ten years ago!

Karen

Healing the broken bond between our young and nature is in our self-interest, not only because aesthetics or justice demands it, but also because our mental, physical, and spiritual health depend upon it.

Richard Louv, *Last Child in the Woods*

When we see land as a community to which we belong, we may begin to use it with love and respect.

Aldo Leopold, *A Sand County Almanac*

Richard Louv will speak on November 8 at 6:30 p.m. at the IMA as part of the 2007 Spirit & Place Festival. To reserve a free ticket, call 317-920-2649 before November 1.

Outdoor Learning Center

continued from page 1

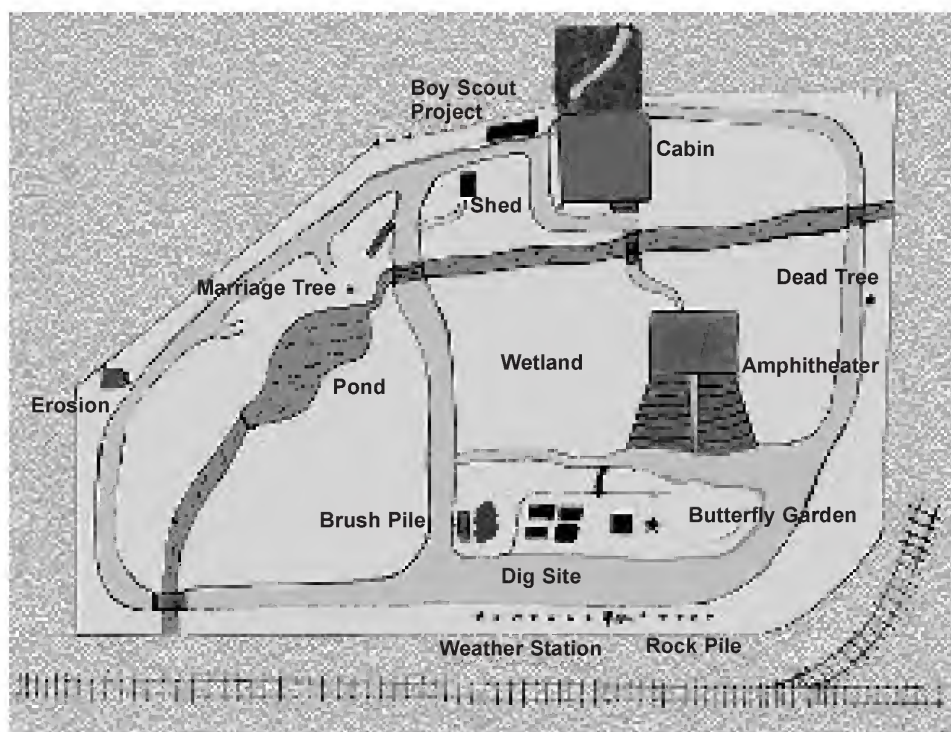
where are they from? I've had Kevin out there several times, and other people who are more knowledgeable than me, walking around and going, "Okay, this is good; this is not."

INPAWS: The Outdoor Learning Center was in existence before you showed up. Is it unique to Avon? How does it fit into the school curriculum?

Ford: This is not unique to Avon at all; Outdoor Learning Centers are all over the place. The national Wildlife Federation and Indiana Wildlife Federation certify Schoolyard



Carol Ford, Coordinator, Avon Outdoor Learning Center.



Plan of the Outdoor Learning Center

Habitats. We are now a Schoolyard Habitat, and we won the Outdoor Lab of the Year award from the Indiana Tree Farm Committee.

You could have just a crack in the ground with a plant coming out of it and call it your outdoor lab, but if you had enough curriculum and enough involvement in that crack in the ground, you could win the Outdoor Lab of the Year award. It doesn't matter how fantastic the place if it's not

used to its full potential, or not used correctly according to the proper curriculum. So we've run programs from Hoosier River Watch, Project Wild, Project Wet, and Project Learning Tree.

On in-service days, teachers come out to get acquainted with the place. Every teacher is introduced to the Outdoor Learning Center as an extension of the classroom. They're encouraged to use it not only for the

science disciplines but for language arts, art, and mathematics as well. (Going there is not considered a field trip, so it doesn't cut into their field trip time.) All the things they do in the classroom can be enhanced at the Outdoor Learning Center.

INPAWS: Is there a set curriculum for the Center?

Ford: The teachers figure out ways to use it. Teachers come up with an idea, and they expand on it, and I ask them for a copy that we can compile with other lesson plans on the school corporation t-drive (a website for teachers). Often they'll have full grade levels out there, and they'll do bugs at one station, tree identification at another, water testing at another. We also have an 1830s cabin, and a couple times a year there's a Pioneer Day where they do butter churning and candlemaking, old fashioned paddle book making, and cornhusk dolls. The children are encouraged to dress in period clothing and bring their lunch in a bucket or a bag.

I teach a lot out there about water quality, tree canopy, natives, and invasives. It's amazing when you point out to a bunch of kids a burr sedge, and they look at it for a second and go, "Whoah, that's cool!" I love that reaction. Or we talk about seeds. What is this thing on the ground? Well, it's a walnut. What do we use the walnut for? What does the wildlife use the walnut for?

I meet extended day kindergarten once a month, two classes, and we have an absolute blast. I teach about snakes, bats, birds, bees, and water quality. I get the kids doing dipstick testing of the stream.

INPAWS: How do you think the kids benefit from this kind of opportunity?

They absorb so much more in an environment like this. Most of these children have grown up in the suburbs, where we lack trees—we have sunshine lots, where the bulldozers have come in and plowed the ground and put in new subdivisions. They don't have anywhere they can explore and see things and learn a

love of nature, but out in the Outdoor Learning Center they can. Take a special needs class out there, and the kids talk about everything they see. I can just see the wheels turning, and they're soaking it up.

Colletta Kosiba has brought us plants: wild ginger, geranium, wood poppies so that we have a little more diversity. It's amazing how, in some areas where I took out the bush honeysuckle, about three years later the native plant seeds are coming up.

Mission

- **Develop an appreciation of the interdependency and diversity of the natural environment**
 - **Create an understanding of the historical contributions of the past**
 - **Promote community and global stewardship**
-



I collect acorns and all kinds of seeds, and we have kindergarten kids just throw them in there—you know, gwow, twee! It's just so much fun.

INPAWS: What do you like best about being involved with the Outdoor Learning Center?

Ford: When I have kids out there, and I see their reactions, and I see them

truly enjoying learning. It's not a playground; there has to be a transition from running and screaming on the playground to coming into a natural area like this. But how much they see when they're calm and slow down! Watching them look at an assassin bug, a blood-sucking coon-nosed bug, a spider, or check out the heron in the pond area—I just get a kick out of things like that.

They ask me what's this, what's that, what's that? I tell them, "I've just been at this for eleven years, and I don't know it all. If you have a question I don't have the answer for, you need to look it up."



▲ The 1830s cabin.

◀ The wetland.

The Right Stuff

Rebecca Dolan, PhD, Friesner
Herbarium, Butler University

Tools for Botanizing

Identification of plants is easier with the help of a few tools and some tips.

- De rigueur in the field botanist's tool kit is a **hand lens**. These folding magnifiers let you look close-up at flower parts, hairs on leaves, or other features that can be hard to see with the naked eye. My lens is a relic from my Boreal Flora course taught by Ed Voss at the University of Michigan's Biological Station in Pelston. It has a single 10x lens. It used to have a leather cover but that's long gone. What it does have is a bright red ribbon that allows me to wear it around my neck and find it again if I set it down in the woods.

The ten-times magnification works fine for me. Some lenses come with two magnification levels. Regular, larger magnifying glasses work too, but are bulkier.

Hand lenses are available at ASC Scientific (www.ascscientific.com/lens.html), Carolina Biological Supply company (www2.carolina.com), and other companies. Prices range from less than ten dollars to thirty or forty for a really good lens.

- Some folks prefer to work on identification while in the field. The means lugging **reference books** along. Some field guides are designed with this in mind; others are the size of phone books. I prefer to collect material for later identification.



Tin vasculum reproduction. Courtesy Patrick M. Cunningham, www.cunninghamtinner.com

- Back in the day, botanists like Ray Friesner and Charles Deam would carry a bulky metal storage container called a vasculum. These containers had straps for carrying around the neck, sort of like a quiver for arrows, and kept the plants from being crushed. Now-a-days, I carry **trash or grocery bags** that can be tied to belt loops. A little moist paper towel helps keep the plants fresh.

- Alternatively, you can tote a **plant press** out in the field, or at least in the car, and preserve plants on the spot for later ID.

- When collecting for future identification, be sure to make notes on what was collected where. A **pocket-sized spiral-bound notebook** is good for this. Collect entire plants, if possible. You never know when a key will ask

about basal leaf or even root characteristics.

- Most plants will stay in good enough shape to examine for a day or two if kept cool. Stash them in the back of the refrigerator or in a **cooler**. If they wilt, try submerging the whole plant in cold water and you will be amazed at the recovery, just like limp celery.

INPAWS Officers for 2008–2009

We are pleased to present the slate of candidates for the executive offices of INPAWS. All of these nominees have been active in activities of INPAWS in the past, and we believe they will perform their duties well if elected at the Annual Conference.

The Nominating Committee
Shirley Cain, Wendy Ford, Tom Hohman

Nancy Hill, President

Nancy Hill comes to the office of president having served in numerous INPAWS roles, including recording secretary, demonstration garden chair, annual conference chair, and the newsletter committee. A native of Indianapolis' south side, she graduated from Hanover College with a BA in English in 1971 and spent twelve years working in the not-for-profit sector, the last six in women's health care.

In 1982, Nancy and her husband John opened the Corner Wine Bar, which she ran for nineteen years. They currently own the Broad Ripple Brewpub, which they opened in 1990. Her son Alec, 21, just moved to London, and she has two step-daughters, Jeni and Beth, and two grandchildren, Finn and Violet.

Admittedly an addicted gardener ("I can't resist a new plant"), Nancy has been a Master Gardener since 2000. Her other passions include birds, wildflowers, kayaking, travel, reading, golf, and hiking. Her favorite vacations are long distance walks, which she has done in England, Italy, New Brunswick, and Chile. When she can make herself sit down at the computer, she likes to write creative non-fiction.

Nancy and John live in a 100-year-old house in Broad Ripple which they enjoy periodically renovating. They rebuilt a cabin on a small lake in Owen County, Indiana, where Nancy loves to spend time with the catbirds and the Joe-Pye weed.



Vintage field ecology class. Photo by George W. Martin. Note vasculum on left, “mushroom” baskets in right foreground, and hand lens worn by the woman in the center. Courtesy of the University of Iowa Herbarium.

- Common sense should guide your choice of **clothing** for field work: Always wear long sleeves, pants, and closed-toed shoes with socks, even in hot weather. Ticks, mosquitoes, and poison ivy are everywhere. In Indiana, lightweight hiking boots are good, but I usually just wear old gym shoes.
- If you are working on identifying trees, **binoculars** are handy for distinguishing opposite from alternate, or other leaf features of tall trees.

Kevin Tunesvick, Vice President

Kevin Tunesvick returns to the role of vice president, which he held from 1996 to 1999, organizing numerous memorable field trips around Indiana. A restoration ecologist with Spence Restoration Nursery, he holds a B.S. in Atmospheric Science from Purdue University and has served as both director and stewardship director with the Redtail Conservancy Land Trust.

At Spence, Kevin initiated native plant propagation in 1995 and supervised the expansion of the nursery to nearly 200 species of native herbaceous plants. Today he schedules seeding, transplanting, production, maintenance, and sales of an inventory of over 700,000 plants and manages 180 acres of seed nursery.

Kevin brings to INPAWS a rich experience with professional landscapers, grounds managers, and nurserymen and the gift of spreading the word to the green community. Topics of his numerous presentations include native plant communities for

commercial plantings, storm water management, wetlands, and restoration.

Bobbi Diehl, Recording Secretary

Bobbi Diehl retired in 2005 after more than 25 years with Indiana University Press, where she served in a variety of capacities, most recently as sponsoring editor. Among her acquisitions were Carolyn Harstad's *Go Native!* and *Got Shade?* and a number of other books on gardening for the Midwest.

Since her retirement, her main activity has been coediting (with William D. Middleton and George M. Smerk) the recently published *Encyclopedia of North American Railroads*. She also assisted with Ruth Ann Ingraham's *Swimming with Frogs* (2005) and copyedited *The Nature Conservancy's Guide to Indiana Preserves* (2006).

Continued page 13

Yellowwood

Cladrastis lutea (Michx. f.) K. Koch.

Marion T. Jackson, PhD
Professor Emeritus of Ecology
Indiana State University

Nowhere common, and rarely, if ever, a large canopy tree, yellowwood is nevertheless a distinctive and handsome member of the forest community wherever it occurs.

Found locally from western Virginia and North Carolina to Tennessee, Kentucky, Alabama, and Missouri, it also has outliers in Illinois, Ohio, and Indiana. Separate populations are sometimes found in western Missouri and Arkansas, and adjacent eastern Oklahoma. It reaches its northern natural range limit in Brown County, Indiana, the only county in the state where native populations occur.

According to botanical lore, the esteemed French botanist of pioneer days, André Michaux, first discovered the then-unknown species on February 28, 1796, on a cold, snowy day while trekking on horseback through forests near Fort Blount, Tennessee. He knew instantly that the wet, smooth, silvery gray trunks glistening in the forest gloom belonged to a species that he had never encountered. According to Sargent's manual of trees, yellowwood's preferred habitat is the rich soils of limestone cliffs and ridges, also often overhanging the banks of mountain streams of the southern Appalachians and Kentucky,

but yellowwood is usually rare and local at all sites.

Its pea-shaped flowers and pod or legume fruits immediately define yellowwood as a member of the Leguminosae or Fabaceae family. The genus *Cladrastis* is monotypic in the United States, but three other species occur in southeast Asia, two in China, and one in Japan. (In a future writing, I hope to explain why so many tree genera of the Eastern United States also have sister species represented in the forests of southeast Asia, western Europe, or both.)

Both the scientific and common names for this species accurately describe its characteristics. *Cladrastis* (from the Greek) depicts the genus's fragile or brittle twigs; the species *lutea*, and common name yellowwood, both refer to the wonderful bright lemon yellow color of its wood, which turns a warm light brown as the wood seasons.

Other distinguishing characteristics of the species include a smooth, silvery gray bark (somewhat similar to American beech) on short trunks that often branch



Yellowwood leaf and flower. Photo ©2007 by Will Cook.

near the ground, giving the crown a spreading, rounded form. In fact, yellowwoods often so resemble beech trees that one Indiana stand located in Yellowwood State Forest in northwestern Brown County was decimated during TSI (timber stand improvement) efforts about 1963. Almost all the yellowwood trees there were marked for removal,

likely by a professional forester who apparently did not recognize the species, assuming them to be beech—a truly tragic loss.

Other identifying characteristics include the alternately arranged leaflets on the compound leaves, which make it the only legume tree in Indiana not having its leaflets arranged ladder-like. Its fall coloration is a

Larger Elm Leaf Beetle

Have you seen this beetle feeding on elms (*Ulmus* spp.) in Indiana? Please report any sightings to your local Cooperative Extension Service.

The larger elm leaf beetle, *Monocesta coryli* (Say), is a native insect that can be a serious pest of elms. It is known to cause defoliation in the southern US.

The amber-colored larvae are up to 1/2-inch long. They will crawl to the ground and pupate in the soil. The adults emerge in the spring and may be identified by their yellow backs with dark spots that may join at the hind area of the wings. There is only one generation a year. Both adults and larvae feed on leaves.

vivid splash of bright yellow. Yellowwoods usually flower abundantly only every other year, when the resplendent white bilateral flowers with a lemon-yellow blotch enclose bright red ovaries. Flowers droop in pendulous clusters, often over a foot long, and half as wide. Fruits are pods about the length and shape of those of red bud (some 3-4 inches long by 1/2-inch wide); they ripen in late September, each containing about 6 to 16 hard brown seeds.

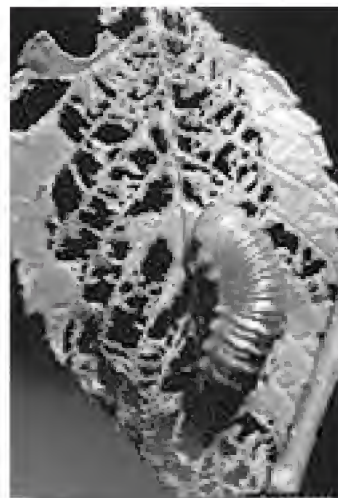
The wood, which is rather heavy at 38 or 39 pounds per cubic foot, is bright yellow when freshly cut. In pioneer days it was highly sought as a source of a yellow dye for coloring cloth. Straight-grained bolts of tree trunks were a coveted choice for stocking

flintlock rifles and pistols. If the trees were abundant enough, it would have been a prized cabinet wood, as it takes a warm satiny finish.

Yellowwood is sometimes planted as an ornamental, and should be more so, if planting stock could be readily found. Some nurseries having a larger inventory occasionally carry seedlings. You can grow your own from root cuttings, or by harvesting seed from a mature tree in the fall, then stratifying them in sand through the winter in preparation for spring sowing. The tree is hardy on protected sites, at least to the latitude of Indianapolis. Pretty in all seasons, it fits most landscaping sites since it rarely exceeds 40 feet in height, and 1-1/2 feet in diameter.



▲ Adult. Photo by Clemson University, SDA Cooperative Extension Slide Series.



◀ Larva. Photo by Gerald J. Lenhard.

Make Your Mark on INPAWS!

As INPAWS transitions to new leadership this January, would you consider taking a more active role?

Serving on an INPAWS committee is a good way to meet people and gain the satisfaction of doing your part to sustain our organization.

When you get a call to participate, please say yes. And if you don't get a call, call us! The INPAWS experience is as rich as you care to make it, and the rewards are there for the taking.

Let us know of your interest by phoning INPAWS officers or committee chairs or by writing to membership@inpaws.org.

What? Alpines in Indiana? Part 1

Barbara E. Plampin, PhD
Shirley Heinze Land Trust

My two-week July 2007 vacation in search of alpine and other European natives included four countries and five botanical sites, three found by a kind expatriate friend and two by my realizing that the higher the cable car ride, the more likely the alpine.

It took a little time to enjoy purple loosestrife, chicory, Queen Anne's lace, garlic mustard, stork's bill, and viper's bugloss (*Echium vulgare*) as natives. The latter is featured at Site 1, Augsburg, Germany's Königsbrunner Heide, a prairie and weeds. Like the Dunes, Königsbrunner is a plant crossroads, here of continental, Mediterranean, and alpine plants. At 1500 feet, the stork's bill and viper's bugloss shouldn't be here, but the local river washed the necessary gravel substrate and seeds down from the Alps.* The site is known worldwide for thousands of tiny purple Mediterranean gladioli (*Gladiolus palustris*) which grow interspersed with a dainty white lily family member, *Anthericum ramosum*. Indiana's own alien "weed" orchid, helleborine (*Epipactis helleborine*), considered Mediterranean, grows here as does state threatened silverweed (*Potentilla anserina*), seen creeping under a hedgerow, too humble for picture or geographical classification in the guidebook. Alpines include a grass of Parnassus (*Parnassia*) cousin, *P. glauca*. Indiana extirpated early coral root (*Corallorhiza trifida*), called "arctic" here, blooms in June.

Site 2: The Giardino Botanico Alpina overlooking Lake Maggiore at Stresa, Italy, reachable (gulp!) only by cable



Photo courtesy of Funivia Stresa-Alpino-Mottarone.

car. Opening one eye just a slit, I found I enjoyed gliding over chestnut trees (no blight here, different species) and looking back at the breathtaking panorama of Alps and water. At 2600 feet, European, Asian, and North American alpine flourish in well-drained gravel beds. Disappointingly, most were past flowering, but I was astonished to see our marsh blazing star (*Liatris spicata*) in full and glorious bloom as well as a bed of somewhat stunted yet-to-bud blue lobelia (*Lobelia siphilitica*). Alpines? Well-drained, raised gravel is not normal habitat for either, though lobelia does tolerate the hose-watered gravel shoulder of my driveway. What is going on? The *Flora of North America* doesn't list blazing star for any Rocky

Mountain state. The volume with lobelia hasn't appeared, but my few Rocky Mountain guides don't include it. Can anyone help?

Skulking in a third raised gravel bed, a solitary prairie violet (*Viola pedatifida*), known from Lake County, may really be alpine; it's found in Arizona and New Mexico.

To be continued.

*Apparently, Mediterranean plant seeds crossed the Alps through mountain passes.

Note: We apologize for a misspelling in last issue's Plant Detectives article. The last word should have been *Eupatorium sessilifolium brittonianum*.

Flyer Available on Midwest Invasive Plants

The new flyer highlights 16 invasive plant species that are new arrivals to the Midwest, providing color photographs and descriptions to help you identify these species. The flyer also includes range maps showing the distribution of each species in the midwestern U.S. and southern Ontario. The maps indicate whether a species is not yet reported for Indiana or whether populations are isolated, locally abundant, or widespread. Please keep an eye out for these species on your land and report any sightings to the Purdue Plant and Pest Diagnostic Lab, Purdue

University at 765-494-7071 or email ppdl@purdue.edu or call 866-NOEXOTIC. These species should be eradicated from your property whenever possible to prevent them from spreading and threatening the health of Indiana forests.

To obtain copies of this flyer, contact Kate Howe, Midwest Invasive Plant Network at khowe@tnc.org or 317-951-8818. Copies can also be downloaded and printed from the Midwest Invasive Plant Network website at www.mipn.org/detectionresponse.html.

Indiana Native Plant and Wildflower Society

Small Grants Program Guidelines for 2008

NOTE: February 1, 2008, is the deadline for grant proposals to be submitted.

INPAWS' small grants program supports projects that are in line with the mission of the society. In 1998, the Board allocated \$10,000 from the general fund to begin an endowment account. The interest from this account is available for grants. **The Awards Committee anticipates funding two grants of up to \$500 each in 2008.** These grants can be used in conjunction with other sources of funding for projects that support our mission.

The mission of INPAWS is to promote the appreciation, preservation, conservation, utilization, and scientific study of the flora native to Indiana and to educate the public about the values, beauty, diversity, and environmental importance of indigenous vegetation.

Applications are requested from groups or individuals and must be e-mailed (preferred) or postmarked by **February 1, 2008**. They will be reviewed by the Small Grants & Awards Committee.

Successful awardees **must prepare a poster or other presentation** to share with the membership at the INPAWS Annual Conference after the project is completed.

At the discretion of the Board and membership, **larger awards may be made** from time to time from the assets of the operating budget. Requests for funds for special projects may be made at any time to the Executive Committee. All requests must be made in writing with a clear statement of how the award would further the mission of INPAWS and benefit our membership.

Application Procedures for INPAWS Small Grants Program

1. Cover sheet, including:

- ▶ Name of project
- ▶ Amount requested
- ▶ Location
- ▶ Applicant/contact person information—name, address, telephone, email
- ▶ New or existing project
- ▶ Category that best describes the project—research, training, education, conservation and habitat, demonstration garden, etc.
- ▶ Prior INPAWS funding

2. Text of proposal, not to exceed 2 pages:

- a. Summary of the project, not to exceed 50 words
- b. Clear, concise description of the project, including:
 - ▶ How does the project further the INPAWS mission?
 - ▶ Why is the project needed?
 - ▶ Specific objectives to be achieved
 - ▶ Specific information on how INPAWS grant

funds would be used, including a detailed species list of all plants and seeds to be used

- ▶ Who benefits from the project? How many? How do they benefit?
- ▶ Names of organizations involved, if any, with a brief description of each, including number of members
- ▶ Financial resources committed to the project from other sources, if any
- ▶ Anticipated starting and completion date of the project

3. Budget sheet, showing:

- a. Labor, material, and program costs
- b. Sources and amounts of funds already raised, if any
- c. Total cost of project

Two Ways to Submit Your Proposal

E-mail (preferred): Send 1 copy to smallgrants@inpaws.org, noting the name of your project in the Subject line.

Land mail: Send 4 copies, postmarked by February 1, 2008, to INPAWS Small Grants Program, P.O. Box 30317, Indianapolis, IN 46230-0317.

Fourteenth Annual INPAWS Conference

Saturday, November 3 • The Athenaeum Building • 401 East Michigan Street • Indianapolis, Indiana 46204

Join your fellow INPAWS members for a day of presentations and field trips at the 14th Annual Indiana Native Plant and Wildflower Society Conference.

This year's conference features both internationally known speakers and local experts. INPAWS will also hold its biannual officer elections and membership business meeting.

We thank our "blazing star" sponsor for this event: Plews Shadley Racher & Braun, LLP, Attorneys at Law.

New This Year!

This year's INPAWS Annual Conference will include a Raffle or Silent Auction and Door Prizes. Proceeds will help to offset the increasing costs of providing such excellent, informative speakers in a wonderful historic venue with great food.

INPAWS members are donating new or gently used items that you might like to own. A list of donations will be published a week before the event.

On November 3, bring your competitive spirit—and your wallet!



Tracy DiSabato-Aust.

Learn about perennials with internationally acclaimed speaker and author **Tracy DiSabato-Aust**. Her 30 years of experience include time at renowned gardens in Pennsylvania, Montreal, Belgium, and England. DiSabato-Aust has written the books *The Well-Tended Perennial Garden* and *The Well-Designed Mixed Garden*. She will present her newest ideas on perennial gardening, timing flowering for a specific event, techniques for layering plantings, habitat improvement, and pest control. (www.timberpress.com/authors/id.cfm/380)

Discover the science of plant evolution through the wild sunflower with distinguished Indiana University Professor **Loren Rieseberg, Ph.D.** Dr. Rieseberg studies the question

"How do new species arise?" as the Research Chair in Plant Evolutionary Genomics at the University of British Columbia and the head of the Rieseberg Lab. (www.bio.indiana.edu/facultyresearch/faculty/Rieseberg.html)



Loren Rieseberg.

Explore the Western Great Lakes region and its pitcher plants, trilliums, and terrestrial orchids with a rare appearance by **Frederick Case, Jr.** The topic will be "*In Search of American Pitcher Plants*" and includes a spectacular dual projection screen presentation. (www.timberpress.com/authors/id.cfm/147)

The final concurrent sessions will be informative lectures about the two fieldtrip options. Visit the Marian College EcoLab with the director, **David Benson**, who will give a special tour and update us on the flora and fauna of the native wetland and



lowland forest landscaped in the Arts & Crafts-era design by Jens Jensen in 1912. (wetland.marian.edu/) Alternatively, join **Robert Barr** from the Center for Earth and Environmental Science at IUPUI for a tour of the Lilly ARBOR project (Answers for Restoring the Bank of the River.) This wetland restoration project is an effort to reforest along the White River's riparian zone

with native trees and wildflowers. (www.cees.iupui.edu/research/restoration/arbort/)

The full-day conference includes snacks, a hearty lunch of authentic German cuisine from the **Rathskeller Restaurant**, speaker presentations, fieldtrips, a book sale, and the first silent auction. Registration form at www.inpaws.org.

Conference Schedule

8:00 Registration & refreshments.

8:30–9:00 INPAWS annual meeting, election.

9:00–10:30 Tracy DiSabato-Aust presents **The Art of Pruning Perennials**.

10:30–11:00 Break and opportunity to browse book sale, raffle tables, and silent auction. All proceeds will benefit INPAWS.

11:00–12:15 Frederick W. Case, Jr., presents **In Search of American Pitcher Plants**.

12:15–1:30 Hearty buffet lunch provided by The Rathskeller Restaurant. Raffle and silent auction bidding ends at 1:30.

1:30–2:30 Loren Rieseberg presents **The Evolution of Wild Sunflowers**.

2:30–3:00 Break with refreshments and final opportunity to browse the book sale. Pick up your auction winnings!

3:00–3:45 Concurrent Sessions. Choose Robert Barr's **Introduction to Lilly ARBOR site at IUPUI campus** or David Benson's **EcoLab Progress Report at Marian College**.

4:15 Depart to ARBOR site at IUPUI or EcoLab at Marian College. Venue closes at 5:00.

INPAWS Officers for 2008–2009

continued from page 6

Bobbi has been a long-time member of INPAWS, and served as newsletter editor in 2004. She has also written a number of articles for the newsletter over the years. Other favorite organizations include The Nature Conservancy and Sycamore Land Trust. Her hobbies are gardening (especially with native plants) and cooking. A former Californian, she now lives in Bloomington.

Hilary Cox, Corresponding Secretary

British-born Hilary Cox lived in Britain and Austria before moving to the US twenty three years ago. Hilary's gardening expertise was born of an interest in growing herbs to make potpourri for gourmet cooking, but her transcontinental move sparked a lifelong study of which plants would survive in the definitely-not-temperate climates of the US.

Engaging in a wide range of gardening pursuits, Hilary has studied at Longwood Gardens, volunteered and worked at the Indianapolis Museum of Art, helped create an award-winning garden at the Chelsea Flower Show in London, and taught gardening classes at an Indiana University Purdue University at Indianapolis (IUPUI) campus.

A charter member of INPAWS, Hilary served on the Council for many years; designed and installed demonstration gardens at Orchard-in-Bloom and a permanent native plant garden at Indianapolis' Historical Society for INPAWS; and writes regularly for *INPAWS Journal*. Her own garden, which is certified as a National Wildlife Federation Backyard Habitat, has been profiled in the local media and featured in such national magazines as *Better Homes & Gardens* and *Fine Gardening*.

Hilary writes and lectures on all aspects of gardening and garden design around town and conducts gardening classes from her home. She is sole proprietor of Leescapes Garden Design LLC.

Kathleen Hartman, Treasurer

Kathleen Hartman joined INPAWS in 2005 to learn more about bee, bird, and butterfly gardening and to improve her Certified Wildlife Habitat. She currently serves as co-chair for INPAWS' 2007 Annual Conference.

Kathleen operates Greenleaf Financial Group, an investment management and financial-planning firm. The firm's signature service, *Green Your Green™*, connects investing decisions with environmental, social, and corporate governance concerns.

Prior to founding her firm, Kathleen worked as a Morningstar mutual-fund analyst and counseled individuals as a financial planner. She has also served as an investment consultant for pensions, foundations, and retirement plans in Chicago-based positions.

Kathleen and her husband live in Indianapolis with their two rescued English mastiffs. Besides cultivating a backyard wildlife habitat, Kathleen also enjoys birdwatching, microbreweries, and Early American art.



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ATTORNEYS AT LAW

No Child Left Inside?

When the No Child Left Behind Act comes up for reauthorization in 2007, a proposed amendment may strengthen and expand environmental education in America's classrooms. Young people face a future that presents such complex environmental issues as global climate change, air and water pollution, and the loss of ecologically sensitive habitat, yet many teachers have abandoned environmental science instruction in favor of math and reading instruction that helps schools pass state tests.

If passed, the amendment, called the No Child Left Inside Act of 2007 (HR 3036; S 1981), would:

- Provide federal funding to states to train teachers in environmental education and to operate model environmental education programs, which include outdoor learning.
- Provide funding to states that create environmental literacy plans to ensure that high school graduates are environmentally literate.
- Provide funding through an environmental education grant program to build state and national capacity.

- Re-establish an Office of Environmental Education within the U.S. Department of Education.

More than two dozen groups are strongly supporting the No Child Left Inside Act, including the Sierra Club, the National Wildlife Federation, and the Audubon and Chesapeake Bay Foundation. The National Education Association also stands behind the bill, which was expected to see Congressional action in September.

Shirley Heinze Volunteers Rescue Rare Plants

A band of plant rescuers recently showed up at a dune near Lake Michigan to save the state endangered purple-bloomed silky aster and other rare plants from the developer's bulldozer.

They were joined by *INPAWS Journal's* regular "Plant Detectives" contributor Barbara Plampin, who, as a board member of the Shirley Heinze Land Trust, had been working to turn the 3.25-acre private sanctuary and home of William and Flora Richardson into a public nature preserve. The

Richardsons had left a trust intended to fund education about the Indiana Dunes.

When the Dune Acres' town council rejected the plan for the preserve, Plampin and a dozen others trudged up the dune with shovels and plastic bags to transplant some of the 79 species of native plants to the Bayless Dune in Miller, Indiana, the former home of another friend of the Shirley Heinze Land Trust. "I don't see any way a builder would be able to avoid destroying the plantings," Plampin said, indicating that the Richardson land is zoned for residential housing and would probably be sold.

Summary of an article by Charles Bartholomew, Gary Post Tribune, Sept. 11, 2007.

CBG Symposium: Harvesting Wild Native Plants

The Chicago Botanic Garden, Glencoe, Illinois, will hold a symposium on the harvesting of wild native plants on Friday, October 19, at its Education Center.

The Janet Meakin Poor Research Symposium will address the many medicinal, food, and ornamental plants that are harvested from natural areas, including public lands. If harvested in a sustainable way, these non-timber forest products (ntfps) can provide economic benefits both to forests and to the people who harvest plants, largely in rural communities. Determining sustainable levels of harvest for these plants is essential to ensuring that management of these resources is ecologically sound.

Registration deadline is Friday, October 12. Downloadable brochure and registration information at www.chicagobotanic.org/downloads/symposia/JMP_symposium.pdf.



IPSAWG Invasives Brochure Debuts

Gardeners should avoid invasive species when buying plants. But what should you plant? The Invasive Plant Species Assessment Work Group (IPSAWG) has just unveiled a new brochure that guides gardeners in selecting plants that will not harm the environment or damage the state's natural resources. *Landscaping with Non-Invasive Plant Species: Making the RIGHT Choice* helps gardeners avoid the bad plants while also providing many beautiful alternatives. The appealing four-color brochure shows a wide array of images of non-invasive plant alternatives. "You don't have to make sacrifices just because you're planting with non-invasive plants," says INPAWS member David Gorden, who represents the American Society of Landscape Architects on IPSAWG. "For every landscaping need, there is a non-invasive plant that can fill the role beautifully."

This brochure replaces the popular *Landscaping with Native Plants* which INPAWS has been using as a handout at its education booth. To learn more about IPSAWG and obtain a copy, visit www.nature.org/indiana. Watch for an article about how the brochure was developed in the next *INPAWS Journal*.

INPAWS to the Rescue!

Is a natural site near you in danger of falling to the bulldozer? Please let INPAWS know. We can organize a team to help you rescue the native plants. With enough advance notice, we may be able to support you in averting the destructive development. Keep your eyes peeled for conservation opportunities in your area, and let us know at membership@inpaws.org.

Coming Up

October 20

INPAWS Hike: Pedestal Rock Nature Preserve (Montgomery, Parke, and Fountain Counties). Shades State Park is the site of this high-quality wilderness area which is rarely opened to the public. Led by Tom Swinford. Meet at 10:00 a.m. EDT. Limited to 25 participants. Details and directions at www.inpaws.org. Register at mhomoya@dnr.in.gov or 317-232-0208 by October 17.

November 3

INPAWS 14th Annual Conference, Athenaeum, Indianapolis (details on page 12)

November 8

Richard Louv, *The Abundant Childhood: Nature, Creativity, and Health*, 6:30–8:00 p.m., Deer Zink Pavilion, IMA. Presented by Indianapolis Museum of Art, Eagle Creek Park Foundation, Inc., and collaborating organizations as part of the 2007 Spirit & Place Festival (www.spiritandplace.org). Admission is free, but tickets are required. To reserve a ticket, call 317-920-2649 between October 1 and November 1.

November 23

Submission deadline for Winter Issue of INPAWS Journal.

February 1

Deadline for INPAWS Small Grants application.

Watch for announcements of INPAWS events and field trips in the mail, via e-mail, and at www.inpaws.org.



Seeking Readers

To enable good use of our organization's historical records, Ruth Ann Ingraham, INPAWS Historian, seeks volunteers who will adopt and read a year or more of our organization's official documents that begin in 1993. The goal is to create a year-by-year synopsis of decisions, events, income/expenses, membership, etc., with reference to dated materials. If this interests you, contact Ruth Ann at rai38@sbcglobal.net or 317-253-3863.

Drawings courtesy of US Fish & Wildlife Service and Brooklyn Botanic Garden.



1st place winner, 2007 Indiana Wildlife Federation poster contest, on the theme "Play and Observe Outdoors, Get Out of the House and into Nature!" By kindergartener Madison Seef, Miami Elementary School, Lafayette, Indiana.

Passion does not arrive on video tape or on a CD; passion is personal.

Passion is lifted from the earth itself by the muddy hands of the young; it travels along grass-stained sleeves to the heart.

If we are going to save environmentalism and the environment, we must also save an endangered indicator species: the child in nature.

Richard Louv, *Last Child in the Woods: Saving Our Children from Nature-Deficit Disorder*



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Running Before Ice

World Distribution of Temperate Hardwood Forest Species

Marion T. Jackson, Professor Emeritus of Ecology, Indiana State University

When European colonists arrived at American shores in the early 17th Century, many of the hardwood forest trees they encountered were tantalizingly familiar. They recognized oaks, beeches,

maples, elms, ashes, willows, birches, chestnuts, hawthorns, sycamores, lindens, walnuts, and other genera of trees, but not hickories—hickory is a New World genus, not native to Europe. They also noted, on closer inspection, that all the New World species were different from those “back home.” How could this be?

Likewise, when American military personnel served in China during World War II, or in Korea during the Korean War, several of the tree genera present there gave them some feeling of home. Again, they discovered oaks, maples, gums, sassafras, tulip trees, elms—and even coffee tree, yellowwood, and rhododendron, if they looked in certain select sites.

How do “sister species” of these important hardwood tree genera happen to occur at sites so widely separated about the Earth?



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INDIANA NATIVE PLANT and Wildflower Society

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INPAWS JOURNAL is published quarterly for members of the Indiana Native Plant and Wildflower Society. Material may be reprinted with the permission of the editor.

All are invited to submit articles, news items, and event postings of interest to our membership. Acceptance for publication is at the discretion of the editor. INPAWS welcomes opposing viewpoints.

Please submit text and photos via e-mail to wwford@comcast.net or via land mail to INPAWS JOURNAL, 6911 Cabernet Way, Indianapolis IN 46278.

Submission deadlines for specific issues are as follows:

Spring
February 23 for April 1 mailing

Summer
May 23 for July 1 mailing

Autumn
August 23 for October 1 mailing

Winter
November 23 for January 1 mailing

INPAWS Mission

To promote the appreciation, preservation, conservation, utilization and scientific study of the flora native to Indiana and to educate the public about the value, beauty, diversity, and environmental importance of indigenous vegetation.

Membership

INPAWS is a not-for-profit 501(c)(3) organization open to the public. For membership information, visit www.inpaws.org.

News and Views

Information to be shared with INPAWS members may be directed to membership@inpaws.org.

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Witness to the Magic

I try not to let good things go by unnoticed. In spring the foliage slowly closes in the prospects from all the windows and the porch. When the trees are in full leaf, this place, close to the road as it is, seems remote and set apart. When the leaves fall, the distances lengthen all around....

And I have known days when the temperature would not rise above zero, when snow would be deep, ice on the river, the north wind rattling the branches. Then this house is a little cell of warmth, a cold brilliance coming in at the windows, a good fire in the drumstove, a pot of bean soup simmering, the dog asleep on the floor. Nobody comes, only the birds to the suet feeders. And I have nothing to do but watch and read.

From *Jayber Crow*
by Wendell Berry

Greetings Native Plant Enthusiasts!

This quote from my favorite writer, whom I serendipitously discovered in an excerpt from *The Sunflower Family in the Upper Midwest* purchased years ago at an INPAWS conference, came to me as I reflected on these past two years during which I've had the privilege of serving as president of the Indiana Native Plant and Wildflower Society.

It's been a lot of work, as all worthwhile things seem to be, but I've gained so much in the connections and friendships I've made. Most of all, it's been rewarding to just watch and appreciate all the activities that INPAWS accomplishes, and the people who step in to make them happen throughout the seasons.

It amazes me how this organization works—it's almost magical the way complicated, extensive projects seem to materialize with just the right people taking the initiative at just the right time (okay, so occasionally it *has* seemed "in the nick of time"). Sometimes I feel as though watching our members work is like observing nature—with great appreciation and even awe!

Together we have accomplished great things for INPAWS, and it's been a joy to be a part of it. Thank you all for allowing me this opportunity, and for participating in the continued growth, outreach, and accomplishments toward fulfilling our mission of promoting our native flora.

I'm looking forward to watching—and participating in—the future of our organization under Nancy Hill's stewardship and leadership, and I wish her and all the new officers the same incredible support, talents, and energy you've given me.

Karen



Temperate Hardwood Forest, continued from page 1

To understand these widely disjunct biogeographic distributions, we need to examine the fossil record of hardwood forest communities dating back to the early Tertiary Geologic Period of some 60–70 million years ago, a time when many present-day hardwood tree genera, such as *Magnolia*, *Liriodendron*, *Sassafras*, and *Liquidambar*, had newly evolved.

At that time, the Eurasian land mass essentially encircled the northern polar region, except for the northern Atlantic Ocean, with Asia and North America being connected by a very wide land bridge across the present Bering Sea. This huge circumpolar land mass was generally low in elevation, uniformly quite moist, and exceedingly warmer than are northern North America and Eurasia today. As a result, the Arcto-Tertiary Temperate Hardwood Forest was essentially continuous from Greenland to Alaska to Siberia, and thence to Scandinavia.

Late in the Tertiary Geologic Period three major events occurred simultaneously (not literally, but over several million years—almost an eye-blink, geologically speaking):

First, as continents jostled for position via plate tectonics (continental shifting), this launched a period of very active mountain building across much of the globe. During a period of several million years, mountain ranges known today as the North American Rockies; South American Andes; European Alps, Pyrenees, and Scandinavian Ranges; and Asian Himalayas arose or greatly increased in elevation.

◀ Glacier photo on page 1 courtesy of www.mongabay.com.

Extent of all glaciations over the last three million years, superimposed on each other. The stars mark center points of different glaciations; the X marks magnetic north. Image courtesy of Jno Cook. ▶

Second, as land masses elevated, the climates of the Northern Hemisphere cooled dramatically, eventually culminating in the onset of the Ice Ages typical of the Late Pliocene and Pleistocene Epochs.

Third, the newly formed high mountains influenced wind flow and precipitation patterns, causing huge rain shadows to develop in the lee of mountain ranges, resulting in the development of (or expansion of) extensive grasslands and/or deserts.

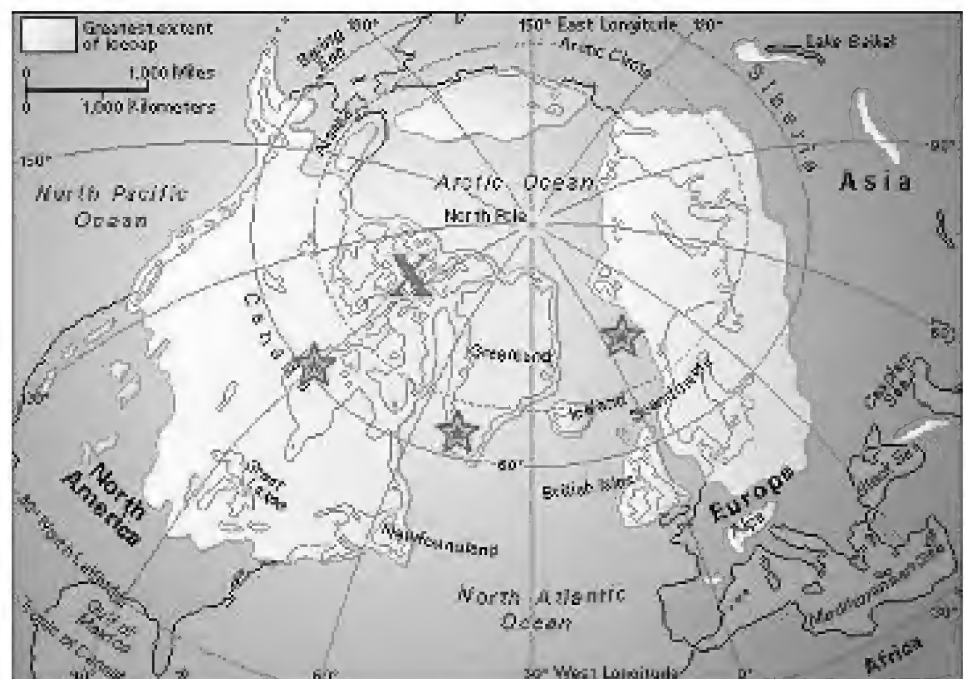
As cooling trends and drought patterns intensified and deepened, the once-vast circumpolar temperate hardwood forest became fragmented. The remnants were forced to migrate southward especially, and also eastward or westward toward refuges, each having an environment amenable to temperate hardwood forest species—namely Eastern North America, Western Europe, and Southeast Asia—where this vegetation type resides today.

As the climates continued to cool drastically at the onset of the Pleistocene Ice Age, the hardwood forests migrated southward (or attempted to do so) over a several thousand year period, moving seed by seed, during hundreds or thousands

of tree generations, to refuges in more favorable climates. Pollen profiles from bog and lake sediments trace the path of these tree migrations, and the trees we find today tell us that the outcomes of these migrations were by no means uniform.

In Eastern North America, the low-lying Appalachian Mountain Chain, oriented basically north-south, provided an essentially continuous migration corridor to refuges in the coves of the Southern Appalachians, with their environment most suitable to hardwood forest species. It was here that a multitude of deciduous hardwood tree species were able to “overwinter” the rigors of the Ice Age. As a result, Great Smoky Mountains National Park has the richest assemblage of temperate hardwood tree species anywhere in the world. (Interestingly, the Mixed Mesophytic cove forests of the Southern Appalachians today have a very similar *generic* composition of trees to what occurred in the Arcto-Tertiary forest of 60–70 million years ago.)

In contrast, the east-west mountain ranges of southern Europe (the Alps and Pyrenees) lay athwart the migration path of the trees attempting to “escape” the southward-moving Pleistocene ice sheets. Many of the





Maple beech forest. Photo courtesy of U.S. Park Service.

trees could not survive the rigors of the high-elevation mountain passes, especially in the taller Alps, so that many species of hardwood trees became extinct when they found themselves with their backs literally to a wall of advancing ice masses.

As a consequence, the native hardwood tree species richness of Europe today is only a fraction of that occurring in the Eastern U.S.—only around 100 in Europe versus about 400 in the Eastern U.S.—and Indiana has about the same deciduous tree floral diversity as does all of Europe!

As the climate warmed, and the ice sheets covering much of the Northern Hemisphere receded at the close of the Pleistocene, the tree migration reversed in the glaciers' wake

and moved back northward onto the newly minted soils of the de-glaciated landscape, a process that was still ongoing when the European settlers arrived at America's shores.

Now, a footnote to explain the origin of "sister species" that occur in the widely separated Temperate Deciduous Forest regions of the Northern Hemisphere:

The primary reason that species are sisters rather than identical (for example, *Liriodendron tulipifera* in the Eastern U.S. versus *L. chinensis* in China) is that the geographic range separation near the end of the Ice Age resulted in the evolution of parent species into two or more daughter species. Each new species became more precisely adapted to its new sur-

roundings during the millennia since the Pleistocene retreat, and gene flow was prevented between the isolated populations by the barrier of geographic distance.

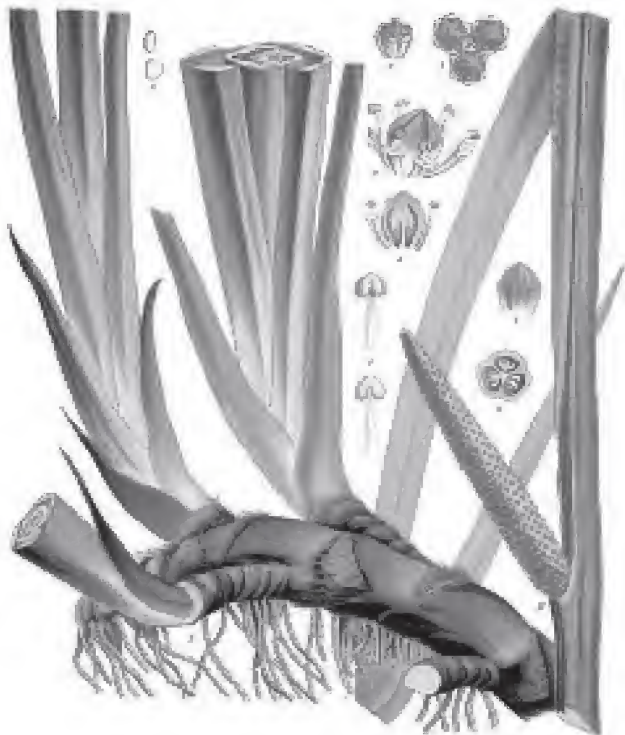
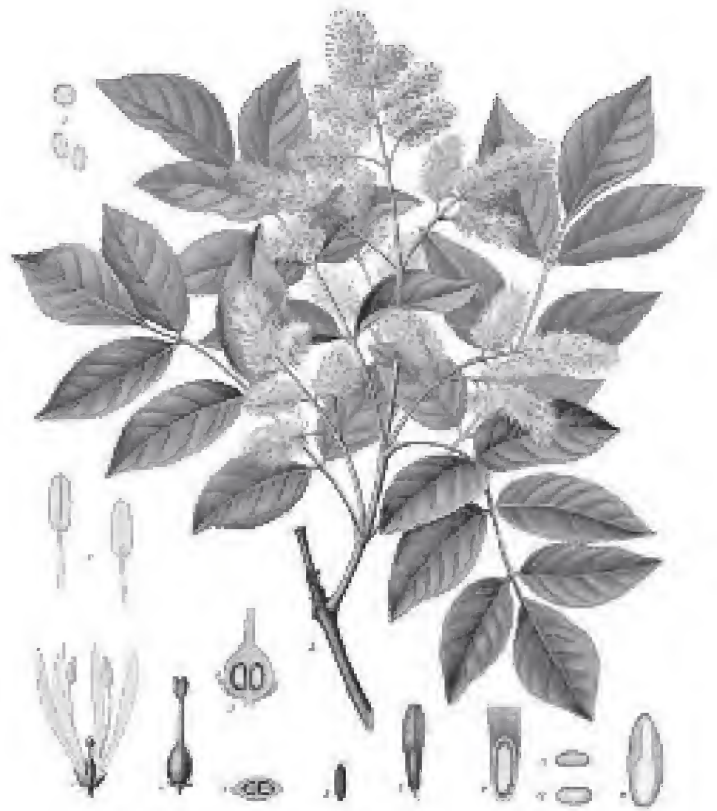
The Power of Observation

The sine qua non of botanizing is putting correct names to the plants you find growing in the wild. Here are some things to keep in mind when you come across a plant you would like to identify.

They all involve heightening your skills of observation. Practicing these skills is one of the things I like best about botanizing, and from what I have read, exercising all the senses involved should ward off the declining mental acuity that comes with aging—I hope so anyway.

Surroundings. First, take a look at your surroundings. Habitat is a major clue. Most plants are fairly specialized in where they grow. Are you in the woods? Along a stream or creek? In a prairie or meadow? These are examples of stable plant communities.

Other kinds of habitats are referred to in manuals as “disturbed” or “waste-places.” These are habitats that share the condition of being more-or-less-frequently disturbed by plowing (farm fields), mowing (yards, roadsides), herbiciding (railroad rights-of-way), or even natural events like flooding. Certain kinds of plants are more likely to be found in each habitat type. When you gain some familiarity with what will be found where, it narrows the focus of your search for identifying clues.



Soil. Next, what is the soil like? Wet? Sandy? Soil characteristics can be clues to plant identity.

Cultivated plant? This can be tricky but is often an important clue: Could your plant have been planted and be part of old landscaping, or are you in an area where it could have recently escaped from cultivation? Wild plant identification manuals won't include cultivated plants, and you could spin your wheels thumbing through the pages for a mystery plant that is not truly wild. When I suspect a mystery plant is a cultivated plant, I use Michael Dirr's *Manual of Woody Landscape Plants* or Steven Still's *Manual of Herbaceous Ornamental Plants*.

Woody or herbaceous? Is the plant woody (a tree, shrub, or woody vine) or herbaceous? Try bending the stem. Be aware that some young trees and shrubs don't seem to have wood yet.

Leaves and stems. Look at the arrangement of the leaves on the stem or twig. Are the leaves opposite, alternate, or whorled? Are there winged extensions on the stem, or any pores or markings, thorns or prickles? Other extras on or near the leaf stalks, like stipules or tendrils? Are the leaves simple or compound? Furry or smooth? The same color on top and bottom? Pull off a leaf. Does it have milky sap? Do the crushed leaves have a scent? What is the pattern of the veins in the leaves? These features will be helpful with identification, and may allow you to tell if the plant is, for example, a monocot, which limits the possible identifications.

Flowers. Look for a specimen with flowers. Flowers are much more unique between species than leaves. Many plant families have easily recognizable distinguishing characteristics. The most common plant families in Indiana were covered in my Botany 101 series. When looking at a new mystery plant, try to discern the flower arrangement on the stem, or the inflorescence type, then examine individual flowers for numbers of parts (sepals, petals, stamens). Manuals for herbaceous plants often have plants arranged by flower color, again limiting the focus of the search for your mystery plant.

Cross-check. Have some guesses? Use Google image search to check it out. Go online to www.google.com, click on the Images link, then type in the name of the plant you think it is, and press Enter. You will be rewarded with multiple thumbnail photos and/or drawings of the plant you typed in, and you can click on any thumbnail for a larger view and further information to help you verify your find.

You are also welcome to come by the Friesner Herbarium at Butler University for help with identification (phone ahead to 317-940-9413). Mary Welch-Keesey, Consumer Horticulture Specialist, Purdue University, Department of Horticulture and Landscape Architecture, is always glad to help, too (317-630-3257). Outside Indianapolis, call Purdue toll-free at 888-398-4636 and ask to be transferred to Mary or to the Purdue Extension office in your county.

Mary and I will also attempt to identify plants from digital photos sent via e-mail (rdolan@butler.edu, marywk@purdue.edu). It's much easier with a plant sample in hand, but we love ID challenges. We always learn something and get a chance to hone those observation skills.

◀ Franz Eugen Köhler was a keen observer and recorder of plant details. His 1887 work, *Köhler's Medizinal-Pflanzen*, contains some 300 full-page chromolithography illustrations. Pictured on the opposite page are the European *Acorus calamus* and *Fraxinus ornus*. See the full collection at http://commons.wikimedia.org/wiki/Koehler_1887_alphabetical_latn.

Welcome to Our New INPAWS Members

CENTRAL

Rachel Anderson

Nancy Ayres

Gail Bartley

Terry L. Bowen

Dan Cook

Deborah Corn

John Correll

Debbie Davidson

Sarah Gray

Jack Humbles

Johnson County Garden Club

Kim Purucker

David Queisser

John & Mary Thieme

Martha B. Van Mook

Debra L. Wilson

Pat Wittberg

EAST CENTRAL

Brittney Vanmatre

SOUTH CENTRAL

Maria G. Collee

Chris Eigenreich

James Finch

Jenny Johnson

Becky Nyberg

Linda Roos

WEST CENTRAL

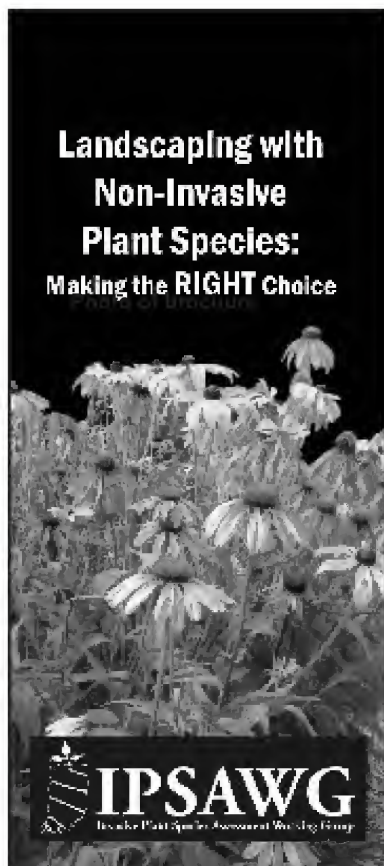
Keith Board

Nila & Peter Grube

*To join INPAWS or renew
your membership, visit
www.inpaws.org.*

All of the Beauty,

Experts Recommend Non-Invasive



Do Not Plant

Asian bush honeysuckle
Autumn or Russian olive
Crownvetch
Dame's rocket
Glossy or common buckthorn
Japanese barberry
Japanese honeysuckle
Japanese hops
Japanese knotweed
Kudzu*
Multiflora rose*
Norway maple
Oriental bittersweet
Phragmites
Privet
Purple loosestrife*
Reed canarygrass (ribbon grass)

*Illegal in Indiana

Plant with Caution

(see brochure for specific cautions)

Burning bush
Chinese maiden grass (*Miscanthus*)
English ivy
Periwinkle
Sawtooth oak
Siberian elm
Wintercreeper

A new brochure is now available that can help gardeners make the right choice when landscaping by NOT choosing invasive plants. *Landscaping with Non-Invasive Plant Species: Making the RIGHT Choice* helps gardeners avoid the bad plants while also providing many beautiful alternatives.

Many common garden plants are not native to the United States, and most of them have little negative impact on our natural areas. However, some are categorized as invasive; that is, they move outside of cultivation and

invade undisturbed natural areas such as wetlands, prairies, and forests. The harm they do to native plant and animal species is immense, and the costs to control and/or eradicate them are enormous.

"Gardening is a fun and relaxing hobby," says Ellen Jacquart, Director of Stewardship with The Nature Conservancy and chair of IPSAWG. "And with this new brochure, IPSAWG is hoping that gardeners have an easier time making the right gardening choices."

The IPSAWG Story

Ellen Jacquart, IPSAWG Task Force Chair

In the beginning, there were a bunch of disgruntled natural area managers. We'd talked to each other for years about the frustration of killing privet that had invaded a fen, only to look up and see a new privet hedge being planted in the neighbor's yard. We grumbled about gardening articles in the Indianapolis paper that promoted Asian bush honeysuckle, another invasive woody shrub. We complained about wildlife biologists recommending autumn olive as beneficial for wildlife, then had to watch while that one species took over thousands of acres in the state, displacing all the other plant species in its rampage—and wondered how these dense, choked thickets could possibly be good for wildlife.

No matter how much we complained to each other, we noticed that nothing much changed. So in 2001 we decided to talk to OTHER people besides natural area managers—nursery owners,

landscape architects, botanists, land managers, and others—and see if we could come to an agreement on which plant species were invasive in Indiana and should not be planted. The Invasive Plant Species Assessment Working Group (IPSAWG) was born. Our task: To assess dozens of species used in landscaping to determine which were invasive or potentially invasive, and to develop recommendations for the use of each of the species.

I remember I was kind of nervous at our first assessment meeting. The assessments were to measure invasiveness of a particular species, and we had chosen to assess Asian bush honeysuckle first. We chose it because it's the most widespread of our woody invasives, and we thought we had pretty good evidence from the field that it was truly problematic. With some trepidation, we laid out the evidence for the number of habitats that were being impacted, the number of acres covered, the ecological impacts

None of the Risks

Alternatives to Popular Ornamentals

The results of 33 invasive assessments for trees, shrubs, vines, grasses, and flowers are included in the brochure with recommendations of either “Do not buy, sell, or plant” or “Plant with caution.” There are specific cautions for particular invasive plants; for instance, wintercreeper (*Euonymus fortunei*) has invaded many forests in Indiana, but can be kept under control easily by planting it only next to concrete or lawn (so it doesn’t creep outside the garden) and not letting it climb (so it doesn’t produce berries and get spread by birds).

that were occurring, and more. Assessments of invasiveness were based on hundreds of documented reports from around the state of these garden plants moving outside of gardens and into natural areas.

It wasn’t too far into the discussion that Mike Cline of Perkins Landscaping, our representative from the Indiana Nursery and Landscape Association, began adding his observations of how invasive this plant is in the landscaping business and what a problem it is for them. It shouldn’t have surprised me—those who do landscape maintenance often fight the same invasive species that we do in the woods or prairies. Ultimately, we all agreed that Asian honeysuckle was one to NOT plant in Indiana.

Six years and dozens of meetings later, IPSAWG has produced a brochure that summarizes our findings and recommendations for the use of landscaping species.

Along the way, we all learned a lot. I learned that the term “green industry”

The brochure’s real appeal may be the wide array of images of non-invasive plant alternatives. “You don’t have to make sacrifices just because you’re planting with non-invasive plants,” says David Gorden, representing the Indiana Chapter of the American Society of Landscape Architects on IPSAWG. “For every landscaping need, there is a non-invasive plant that can fill the role beautifully.”

includes a whole lot more than retail nurseries. It includes landscape design, turf management, plant growers, landscape maintenance, and more; and each facet of the green industry has a different view of this issue. We didn’t always agree with each other, but I think we always ended up with reasonable recommendations.

As we learn more about existing invaders, or find we need to address new species coming into the state, we’ll need to revise or add to our recommendations. By far the best thing that came out of this effort was the actual collaboration of IPSAWG. It’s wonderful to know that, as invasive plant issues come up in the state, we have a group of interested parties who can get together and discuss this issue in a reasoned way and provide good guidance.

IPSAWG Partners

The Invasive Plant Species Assessment Working Group is a partnership among these Indiana agencies and organizations to decrease the intentional introduction of invasive plant species into our state.

Grazing Lands Conservation Initiative

Hoosier National Forest

Indiana Academy of Science

Indiana Beekeepers’ Association

Indiana Chapter of the American Society of Landscape Architects

Indiana Department of Environmental Management

Indiana Department of Natural Resources

Indiana Department of Transportation

Indiana Dunes National Lakeshore

Indiana Forage Council

Indiana Native Plant and Wildflower Society

Indiana Nursery and Landscape Association

Indiana Seed Trade Association

Indiana State Beekeepers Association

Indiana Wildlife Federation

Natural Resource Conservation Service

Purdue Cooperative Extension Service

Seed Administrator, Office of the Indiana State Chemist

The Nature Conservancy

The Wildlife Society, Indiana Chapter

U.S. Fish and Wildlife Service

To learn more about IPSAWG or obtain a copy of the brochure, visit www.nature.org/indiana.

INPAWS Native Plant Rescue Protocol

"Native plant rescue" refers to an organized volunteer event that digs and removes native plants from natural areas that are slated to be destroyed. Native plant rescue is a great opportunity to save native plants from destruction, but this activity can also involve risks. The INPAWS Native Plant Rescue Committee has developed these protocols to assure that rescues are done in a legal, ethical, and successful way.

1. Obtain permission to visit.

Once you've heard about a site that will have native plants destroyed because of development, *it is most important to get the landowner's verbal permission to visit the site.* Explain that you understand the site is going to be developed and that you are possibly interested in doing a native plant rescue on the site. Ask for permission to visit and evaluate the site and let the owner know that you are just looking—if the site is appropriate for a native plant rescue you will be back in touch for permission. If the owner says no, that is the end of the matter—you cannot visit the site without permission.

2. Evaluate the site.

Not all sites are appropriate for plant rescue. First, scout the site to assure that it is not infested with invasive plant species like garlic mustard or Japanese stilt grass. Seeds from these species could inadvertently be moved from the site and spread widely through the rescue effort. Second, make a list of the native species that are salvageable. Keep in mind that spring ephemerals need to be salvaged before the end of May or nothing will remain aboveground to indicate where to dig. Third, evaluate parking and access to find the easiest

way to get people in and out of the site—pots full of dirt get very heavy!

3. Obtain permission to do a native plant rescue.

If the site has salvageable native plants, and is not infested with invasive plants, *approach the landowner for permission to do the plant rescue.* The owner needs to sign the permission form found inside the Plant Rescue brochure or on the INPAWS website (www.inpaws.org). If they will not sign, the rescue cannot proceed. For help in approaching the landowner, contact the Plant Rescue Committee chair(s).

4. Map and verify.

After receiving permission from the landowner or their representative, map and verify the location of the development site with the landowner. Make sure there are no co-owners, tenants, or anyone else to also coordinate with. Consult with the landowner on the timing of the rescue to make sure you don't interfere with the landowner's plans, equipment that will be on site, etc.

5. Set a date.

Set a date for the rescue in consultation with the landowner and inform the Plant Rescue Committee chair(s), who in turn will notify committee members of the time and place of the rescue and ask them to bring shovels, trowels, plastic bags, pots, trays, and anything else they can bring to help transport plants.

6. Day of the rescue.

As volunteers arrive, be ready to direct them as to where to park. Have them gather their tools and take them on a tour of the site, emphasizing boundaries they are to stay within and which plants to focus on. Go over how to dig the

plants, keeping the dirt intact around the root ball and carefully placing in a bag or pot. Be respectful of the landowner; do not leave empty pots or bags at the site. Fill in holes and leave the site as you found it—minus some native plants.

7. Post-rescue care and maintenance.

The general policy is that rescuers take the plants home, holding one-half for the spring INPAWS Plant Sale and Auction and taking the other half for their own use. In some cases, there may be a demonstration garden or local nature center that could use the plants, and those are appropriate uses. *It is rarely, if ever, appropriate to transplant the rescued plants into another natural area.* This risks introducing new species and new genotypes into a natural area and should not be done without a thorough assessment of the risks and benefits.

Once the rescuers take the plants home, it is up to them to keep the plants alive. This is usually done by planting them in a protected spot where they receive bright indirect sunlight and good drainage. Most native plants survive the move very well if the environment they are moved to matches the one from which they were rescued.

8. Furnish plants for INPAWS Plant Sale.

The rescuers need to coordinate with the INPAWS Plant Sale planners to make sure the rescued plants show up when and where they are needed, and in good enough shape to sell. The INPAWS Plant Sale is held every May on the Saturday morning before Mother's Day.

Protocol revised Spring 2007 and downloadable from www.inpaws.org.

The Heartbreak of *Psoralea*

Many first-time visitors to the University of North Carolina Herbarium ask, "Do you have any really rare plants?" My answer is, "Yes, hundreds!"

This is the main repository for rare plants inventoried by the North Carolina Natural Heritage Program." If that fails to impress, I show them Accession #566869: *Psoralea stipulata*—now categorized as *Orbexilum stipulatum* (Torrey & Gray) Rydberg—collected by C. W. Short in 1842.

Orbexilum stipulatum, commonly called Falls-of-the-Ohio scurfpea, is an ivory-billed woodpecker of the plant world: It was last seen in 1881 and is presumed extinct. Biologists cling to the hope that it too will be rediscovered. All known specimens of *Orbexilum stipulatum* were collected between 1835 and 1881 from a single location: Rock Island, Falls of the Ohio. Though some herbarium specimens claim this location as Indiana or Ohio, the river channel is within the Commonwealth of Kentucky (the Northwest Ordinance of 1787 defined the Indiana state line as the north bank of the Ohio River¹). The Falls of the Ohio is a 26-foot drop over a series of rapids and rock shelves in a 2-mile stretch of the Ohio River. Louisville, Kentucky, and Clarksville, Indiana, grew up at this navigational barrier. Rock Island, one of the larger islands in the cataract, "is (or was) a small Devonian limestone island of the Falls of the Ohio River and within the Louisville, Jefferson County, Kentucky corporate limits. Most of the island was destroyed in the 1920s as a con-

sequence of building U.S. Dam No. 41...and the Louisville Hydroelectric Plant."²

Charles Wilkins Short, M.D. (1794–1863) made many collections of *Orbexilum stipulatum* over a 20-year period, all from Rock Island. The UNC Herbarium specimen, collected by Short in 1842, is in perfect condition.



Falls-of-the-Ohio scurfpea (*Orbexilum stipulatum*). USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 2: 364.

Asa Gray (1810–1888) praised Short as "the first in this country to prepare on an ample scale dried specimens of uniform and superlative excellence and beauty...the vast improvement in

the character of the dried specimens now generally made by our botanists may be mainly traced to the example and influence of Dr. Short."³

Will Falls-of-the-Ohio scurfpea be rediscovered in the wild? Suitable habitats—flood-scoured riverbank bedrock, gravel bars, and limestone barrens and glades—exist nearby in Kentucky and Indiana. Happily, another Rock Island refugee was recently discovered in Indiana. *Solidago shortii*, named in honor of C. W. Short by Asa Gray, had disappeared from Rock Island by the late 1860s. It was believed extinct until a population was discovered in 1939 by Dr. E. Lucy Braun in Kentucky more than 160 km east of Rock Island. In 2001, during a botanical inventory of the Blue River in Indiana, researchers found a population of *S. shortii*. This site is "perhaps Indiana's largest and most diverse example of the brush prairie gravel wash community...situated at the base of a south-facing slope bordering the Blue River...18 km upriver from the Ohio River."⁴

Is *Orbexilum stipulatum* alive and well, lurking on some gravel island in southern Indiana or northern Kentucky, awaiting rediscovery like *Solidago shortii*?

Perhaps, but optimism must be tempered by the probable lack of a seed source: Although he observed the plant over a span of 20 years, Short never saw it in fruit, nor was he able to cultivate it.⁵ For now, all we have are herbarium specimens. While the UNC Herbarium is proud to be the conservator of such a rare specimen, we sincerely hope not to add many

Continued next page

more species to our “exist only as herbarium specimens” list. Our goal is to preserve the flora of forests, streams, dunes, and islands so we can enjoy them where they belong—in the wild.

This article originally appeared in the North Carolina Botanical Garden Newsletter 35(5): 8.

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INPAWS to the Rescue!

Is a natural site near you in imminent danger of falling to the bulldozer? Please let INPAWS know. We can organize a team to help you rescue the native plants. With advance notice, we may be able to support you in averting destructive development. Keep your eyes peeled for conservation opportunities in your area, and let us know at membership@inpaws.org.



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SHADLEY
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ATTORNEYS AT LAW

Thanks for



**Deadheading
Diva Tracy
DiSabato-Aust.**



**Genome Guy
Loren Rieseberg.**



Frederick Case, Jr., with Doris and Bob Thomas.

The Memories

Photos by Ruth Ann Ingraham
and Wendy Ford



Tasty German fare at the Rathskeller.



Visiting with friends old and new.



Tour of the Lilly ARBOR Project site at White River...



...led by IUPUI's Bob Barr.

Figures are in for the 2007 INPAWS Annual Conference held November 3 at the Athenaeum.

The day-long event drew 152 attendees, including 15 walk-ins, 19 non-members and 8 new members. Sponsorship revenue was \$1,750, offsetting in part the facility and food costs of \$35 per person.

Book sale gross revenues were \$4,805 compared to \$3,095 in 2006 (profit to be determined). The new Silent Auction feature sparked competitive bidding and was enjoyed by all.

Keynote speaker Tracy DiSabato-Aust sent a thank you note following the event stating, "I was impressed with the knowledge, curiosity, community involvement and simply the kindness of your group. What you are doing will make a difference in our world."

The end-of-meeting field trips to Marian College Eco-lab and the Lilly ARBOR project proved popular (27 attended the ARBOR trip).

Thanks again to our sponsors, the auction donors, and all the volunteers who helped to make the INPAWS Annual Conference a most enjoyable and informative day—and special thanks to our indefatigable conference organizers, Kathleen Hartman and Dawn Stelts.

Look for additional candid photos at www.inpaws.org.

Natural Heritage of Indiana on TV

We hope you had a chance to see the first episode of *The Natural Heritage of Indiana* on WFYI-TV in November. If so, please tell us how you liked it. WFYI tells us the first broadcast reached an audience of more than 13,000 households. A script of the first episode, which focused on the geological history of Indiana, will be posted soon at a Natural Heritage web page currently residing at www.wfyi.org.

A committee of expert advisors, including our own Becky Dolan, continues to review plans for the upcoming episodes. Watch for a report on her experiences, and the results of INPAWS's \$5,000 investment in this series, in the next issue of *INPAWS Journal*.

INPAWS Invites School Participation

At our November meeting, the INPAWS Board of Directors established a new membership category—one for school nature/ecology clubs with an interest in native plants. Annual dues will be \$25.

INPAWS Journal and all other mailings will be sent to the teacher or leader of the group, who will disseminate the information to club members. It is our understanding that, if the club is school-sponsored, the school will reimburse the teacher for the dues.

Members of the school group will be able to attend INPAWS events such as plantings, invasives pulls, field trips, and volunteer activities. In cases where there is limited space (such as hikes with restricted numbers of participants), arrangements will need to be made in advance with the event leader.

Slide programs and other information will be made available to the groups, and they will receive special consideration regarding grants for native plantings on their school property.

If any of our members are now working with a school group, please advise them of our new policy and contact Dan Anderson, danjand1@sbcglobal.net, for further information.



WiserEarth

INPAWS has been included in WiserEarth.org, a website "providing a system of support, communication, and collaboration for the people who are transforming the world." The site lists more than 106,000 non-governmental, social benefit organizations addressing the central issues of climate change, poverty, the environment, peace, water, hunger, social justice, conservation, and human rights.

WiserEarth.org is a searchable library of resources, events, people, and organizations, growing larger every day. There are no sponsors or advertising.

INCA Conservation Day at the Statehouse 2008

On Thursday, January 10, Indiana Conservation Alliance (INCA) invites you to join members of like-minded organizations in the task of convincing our legislators to conserve Indiana's natural heritage. Conservation Day at the Statehouse is your opportunity to learn of pending legislation and to buttonhole your own senator or representative to persuade them to cast a vote for conservation. A morning information session brings you up to speed with the latest conservation issues in the legislature.

This event is FREE to all registrants, thanks to sponsor member donations. Parking is available at White River/State Museum State Park and Circle Center Mall.

Following is an outline of the day's schedule. Details will be updated regularly at www.nature.org/indiana.

8:30–10:45 Morning Information Session, Room C, Indiana Government Center South; registration; introduction by INCA; conservation priorities discussion and Q&A

11:15–1:30 Reception with legislators, North Atrium, Indiana Statehouse; presentations and award for Conservation Legislator of the Year; light refreshments for Conservation Day registrants, legislators, and their staff

You may register the day of the event, but the planning for reception food will be easier if you register by January 3.

INCA is a state-wide network of nonprofit organizations providing a unified voice for the conservation and wise use of our natural resource to enhance our quality of life.

By attending Conservation Day at the Statehouse you show your state legislators that you are a voter who cares about the natural resources in our state. The more people that attend, the greater the impact. Coming in groups and carpooling with co-workers, friends, and family are encouraged. Can't miss work? Just come for your lunch hour. You'll be inspired by meeting other active conservationists from around the state.

Register at nature.org/indiana, or contact Angela Hughes, Conservation Day Coordinator at 317-951-8818 or ahughes@tnc.org.

Plan Now for 2008 Plant Sale and Auction

It is way too early to be thinking about the 2008 INPAWS Plant Sale and Auction, right? Wrong. Believe it or not, planning for that sale is already underway.

We have a new location for the sale in 2008: Trinity/St. Richard's Episcopal Church and School, located at 3243 N. Meridian Street in Indianapolis. The larger space available at this location will allow us to organize the sale in a different way and try some new things. The date of the sale is May 10.

One new idea that we will be trying this year is to encourage members to grow plants from seed, and donate their results to the sale. While we have had some seedlings in the past (mostly donated plants from some of our nursery friends), we would like to expand this effort. We think that it will be a nice complement to plants

donated from rescue efforts and member gardens.

To help with this effort, Dawn Bauman has volunteered to take any seeds that members collect for her and start seedlings from them for the sale. If she gets overwhelmed with seeds, she may regret this offer, but let's take that risk. If you have seeds for Dawn, you can contact her at dbauman@iupui.edu to arrange to get the seeds to her.

Look for more details about the sale in the spring issue of *INPAWS Journal*.



Bluejoint grass at Goose Lake Prairie, Illinois.

Coming Up

Thursday, January 10
INCA Conservation Day at the Statehouse 2008
 8:30 a.m. to 1:30 p.m. Free.
 Register at www.nature.org/indiana.

Thursday, February 7
Urban Greening Lecture
 Landscape architect Douglas Hoerr presents urban corridors and green roofs he has designed in the Midwest. Supported by IMA Horticultural Society. 7:30 p.m., Deer Zink Events Pavilion, Indianapolis Museum of Art.

Saturday, April 12
INPAWS Hike in Pine Hills Nature Preserve, Montgomery County.

Wednesday through Sunday, April 23–27
58th Annual Smoky Mountain Wildflower Pilgrimage
 Online registration begins March 12 and ends April 18 at www.springwildflowerpilgrimage.org.

Saturday, May 3
INPAWS Hike in Duning Woods Nature Preserve, Wayne County.

Saturday, May 10
INPAWS Plant Sale and Auction. Trinity/St. Richards Episcopal Church.

Watch for announcements of INPAWS events and field trips in the mail, via e-mail, and at www.inpaws.org.

What? Alpines in Indiana? Part 2

Barbara E. Plampin, PhD, Shirley Heinze Land Trust

We rejoin our intrepid Plant Detective on her two-week European vacation last summer, in search of alpine natives...

Site 3: "Seen 'em before," I silently grumbled as my hostess drove us to her treat of water lilies in a mountain lake at 2200 feet near Ruhpolding in southeastern Bavaria. But many lilies (*Nymphaea species*) turned out to be maroon, not white. Their accompanying yellow pond lilies (*Nuphar ? advena*), common in the Indiana Dunes, are protected there. Furthermore, tiny pink "little alpine violets" or cyclamen (*Cyclamen purpurascens*) dotted the rocky woods beside the lake.

Site 4: Overlooking Switzerland's Lake Lucerne, Mt. Rigi, at 5000 feet, is ascended by rack railway. The little train claws its way upward through small pastures punctuated by the bells of brown Swiss cows and frequent patches of stately gentians (*Gentiana lutea*), whorls of yellow flowers and leaves surrounding nearly six-foot stems. The descent via a second rack railway passes, on one side, close to fern-studded rock faces threaded with numerous waterfalls that one can almost touch. The amazing flower is the protected pink-purple, downward-facing martagon lily (*Lilium martagon*), here abundant. No Indiana plants, but a good place.

Site 5: Kreuzjoch, Austria, near Innsbruck, at 7000 feet, requires another cable car ride, this one colorful with paragliders sailing by and carpets of dwarf rosy rhododendrons (*Rhododendron ferrugineum*) below. Step off the narrow,



stony path at the top and fall a thousand feet, perhaps.

Look across to sheer, sterile Dolomite Mountain rock faces and far, far below to the valley. Look beside the path for intensely blue gentians (*Gentiana ? verna*), devil's claws (*Phyteuma sp.*), and forget-me-not-like herald-of-heaven (*Eritrichium nanum*); yellow spectacle pod (*Biscutella laevigata*), with seeds resembling pairs of eyeglasses, and rock rose (*Helianthemum nummularium*); orange hawk's beard (*Crepis ? aurea*), more pink rhododendrons and rosy beaked lousewort (*Pedicularis rostratospicata*), white silver plant (*Dryas octopetala*) with feathery seed heads and ever-

green bears' grapes (*Arctostaphylos uva-ursi*). The Indiana cousin, bearberry, is variety *A. uva-ursi coactilis*, state rare.

Yes, we do have alpine natives in Indiana. Ours also include yellow lady's slipper (*Cypripedium calceolus pubescens*), round-leaved sun dew (*Drosera rotundifolia*), bog bean (*Menyanthes trifoliata*), two state extirpated species, the American variety of twin flower (*Linnaea borealis americana*), and one-sided shinleaf (*Pyrola secunda*). Don't despise our pesky enchanter's nightshade (*Circaea lutetiana*) with its burs or our aliens, orange hawk weed (*Hieracium aurantiacum*) and lawn prunella (*Prunella vulgaris*). They are alpine natives, too.



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